



LIFTGATES

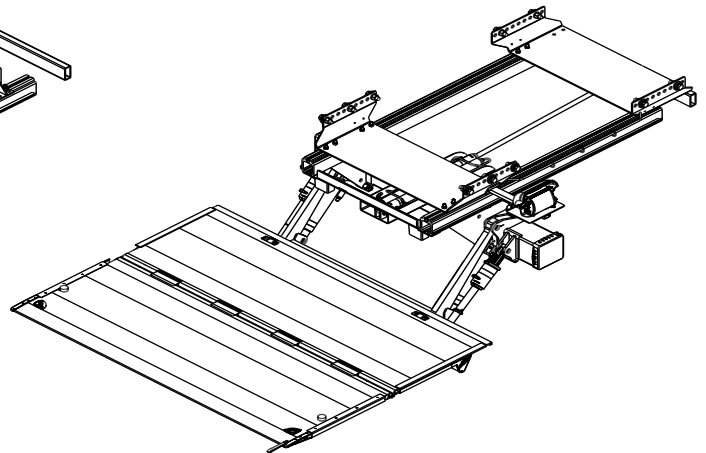
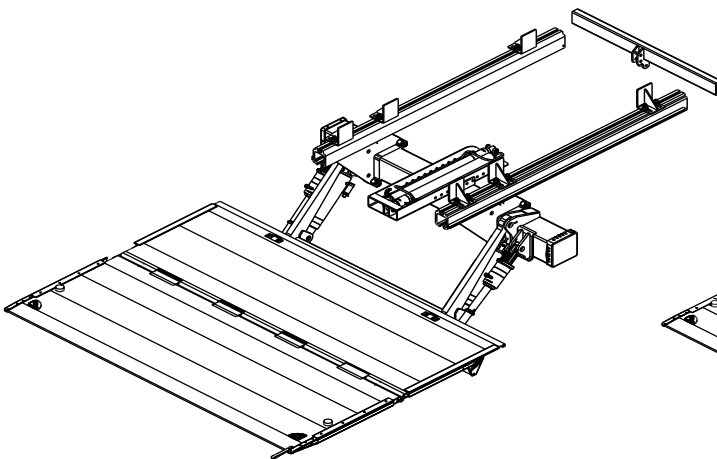
INSTALLATION MANUAL & CHECK OFF SHEET

ILUK 33, 3300 lbs. Capacity

ILUK 44, 4400 lbs. Capacity

ILUK 55, 5500 lbs. Capacity

ILUK 60, 6000 lbs. Capacity



ILUK 33/44/55/60 Installation Manual

Document Part Number: 90-0513-200 / 13-691_90-00_02-00

ECN-M1205, Rev. 1.6, 06-04-18

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**If you received this product with damaged or missing parts,
contact Palfinger Liftgates at (888)-774-5844**

Parts Order

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Company Information:

Company Name: _____

Advisor Name: _____

Vehicle Year Make & Model: _____

Liftgate Information:

Liftgate Serial Number: _____

Liftgate Model Number: _____

Date of Purchase: _____

Date of Installation: _____

1 Manual Updates

Revision	Description
v1.6	<ul style="list-style-type: none">• Reformatted manual to standard format.• Updated installation procedures for Trailer and Truck• Updated electrical schematics

2 Safety Information

This manual follows the Guidelines set forth in “ANSI Z535.4-2007” for alerting you to possible hazards and their potential severity.

DANGER

! **DANGER** indicates an imminently hazardous situation which, if not avoided, **will result** in death or serious injury.

WARNING

! **WARNING** indicates potentially hazardous situation which, if not avoided, **could result** in death or serious injury.

CAUTION

! **CAUTION** indicates a potentially hazardous situation which, if not avoided, **may result** in minor or moderate injury.

CAUTION

CAUTION without the safety alert symbol is used to address practices not related to personal injury.

(In this manual it is used to alert the user to potentially hazardous situation which, if not avoided, may result in property damage.)

NOTICE

NOTICE without the safety alert symbol is used to address practices not related to personal injury. *(In this manual it is to alert you to special instructions, steps, or procedures.)*

- Always be aware of your surroundings.
- Wear eye protection at all times during installation.
- Ear protection and gloves should be used when necessary.

WARNING

Improper operation of this liftgate may result in severe personal injury or death. **DO NOT** operate unless you have been properly instructed, have read and are familiar with the procedures in this manual. This manual has been designed to illustrate the steps needed for the basic installation of the ILUK liftgate. It also provides safety information and simple preventive maintenance tips.

3 Important Information

Before Getting Started

“READ FIRST”

NOTICE

The ILUK liftgate is a heavy duty industrial hydraulic lifting device. Performance and reliability are closely related to proper installation, battery cable connections, and grounding. All grounding surfaces **MUST** be cleaned, prepped, and sealed per this manual. “Cut to size” cables **MUST** be properly crimped and sealed as factory supplied. All connections **MUST** be dressed with dielectric grease or equivalent sealer.

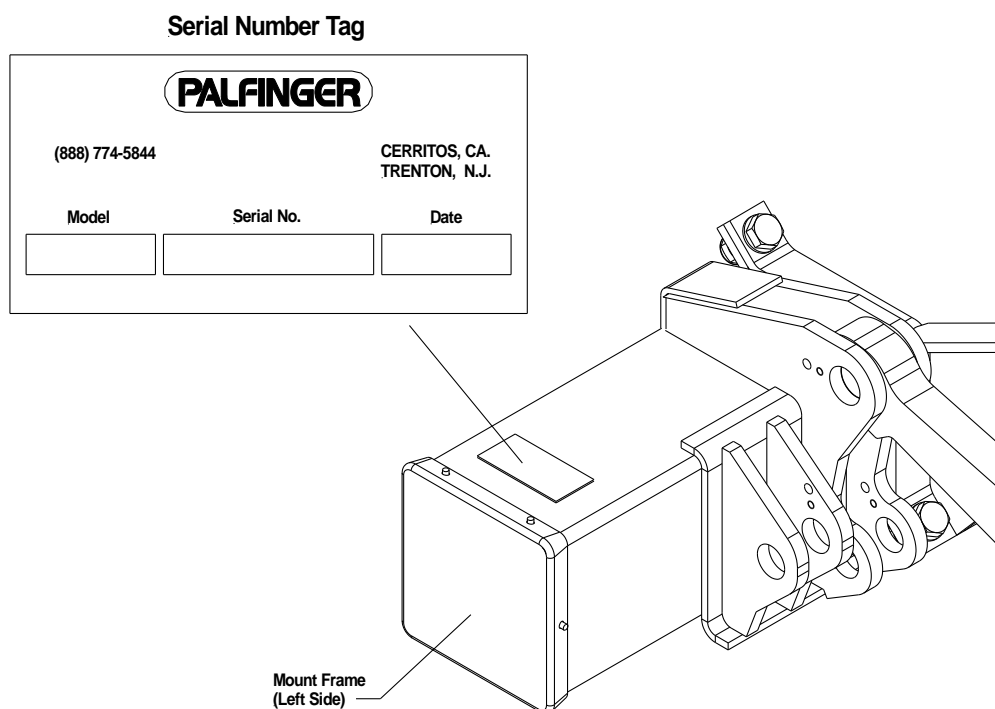
- Review liftgate invoice, packing slip, and installation drawing to assure delivery of correct gate and complete delivery of accessories and optional equipment.
- Refer to Section 5.3 and verify that the truck/trailer has sufficient bed height and mount clearance for the selected gate. Keep in mind that the truck/trailer can settle several inches depending on suspension, over hang, addition of equipment and loading.
 1. If the minimum bed height is not maintained the gate will not fold or unfold
 2. If the maximum bed height is exceeded the gate may not reach the ground
- Read and understand the “Installation Manual” and “Owner’s Manual” in their entirety before starting the installation.
- Refer to your truck manufacturer’s instructions before adding any auxiliary equipment. Installer is responsible for compliance with this manual, OEM and FMVSS requirements.
- All welding should be performed by qualified personnel per AWS standards.
- Always Ground closest to your welding point to prevent arcing through moving parts or electrical parts.
- Contact Palfinger Liftgates for Special Installations not covered in this Installation Manual.
- Do not paint cylinder shafts or nylon bearings (Use non-chlorinated brake cleaner to remove over spray)
- Final Check-Off-Sheet at rear of this manual **MUST** be filled out and sent to Palfinger Liftgates for warranty activation.
- Refer to Owner’s Manual for Operation and maintenance information.
- Check the battery voltage before installation. Flooded lead acid batteries should measure 12.6V and AGM batteries should measure 12.8V. If batteries are not at these voltages, fully charge before installation.

NOTICE

This manual is not intended for use as a repair or troubleshooting guide. Repairs should be performed by a Palfinger Liftgates Authorized Service Center.

This Manual has been designed for use in conjunction with the ILUK series liftgate only which is designed for different capacities and features.

- 1) Refer to the serial number tag on the liftgate, it can be found on the driver side liftatm, as shown.



- 2) Ask your employer or lessor;
- 3) Call your Palfinger Liftgates Authorized Service Center for assistance.
- 4) Call Palfinger Liftgates for assistance in the USA at 888-774-5844. You can also contact Palfinger Liftgates by fax (562) 924-8318 or on the internet at www.palfinger.com

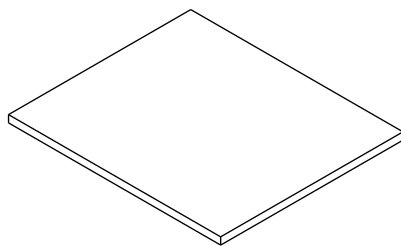
For technical support, contact Palfinger Liftgates or an authorized Palfinger service center. www.palfinger.com

4 Tools For Installation

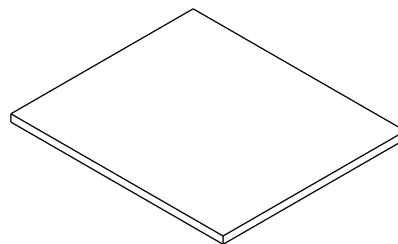
Metric Wrench Set	Basic Screwdrivers	Assorted Pliers	Wire Crimp Pliers
Digital Multi-Meter	Snap Ring Pliers	Hammer	SAE & Metric Allen key Set
½" Impact & Sockets	SAE & Metric Socket Set	Assorted Drill Bits	Floor Jack or Equiv.
Small to medium bottle Jack	Forklift or Over Head Crane	Hand Held Grinder	Paint Gun & Accessories
Pry Bar	3/8 Drill Motor	Grease Gun	Heat Gun or Equiv.
Min. 250 Amp Welder	Cutting Torch or Equiv.	Safety Goggles	Framing Square

4.1 Boxed Items

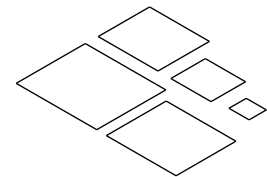
Installation for each boxed item can be found throughout this manual.



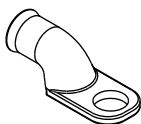
Owner's Manual
1 pc



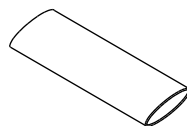
Installation Manual
1 pc



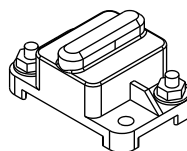
Decal Kit
13 pcs



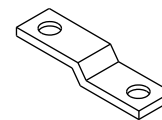
Battery Lug, 5/16"
1 pc



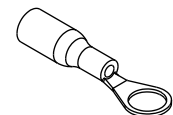
Heat Shrink,
ø1/2" x 3"L
1 pc



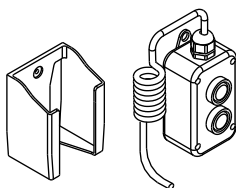
Circuit Breaker
1 pc



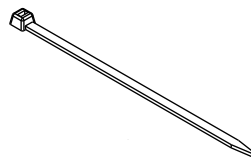
Copper
Bus Bar
1 pc



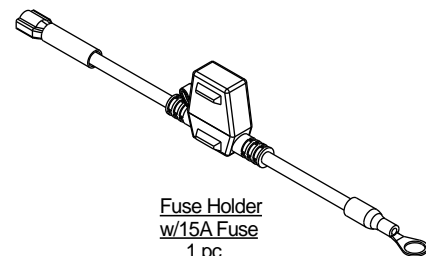
Ring Terminal
1 pc



Hand Held Remote
2-Button
1 pc



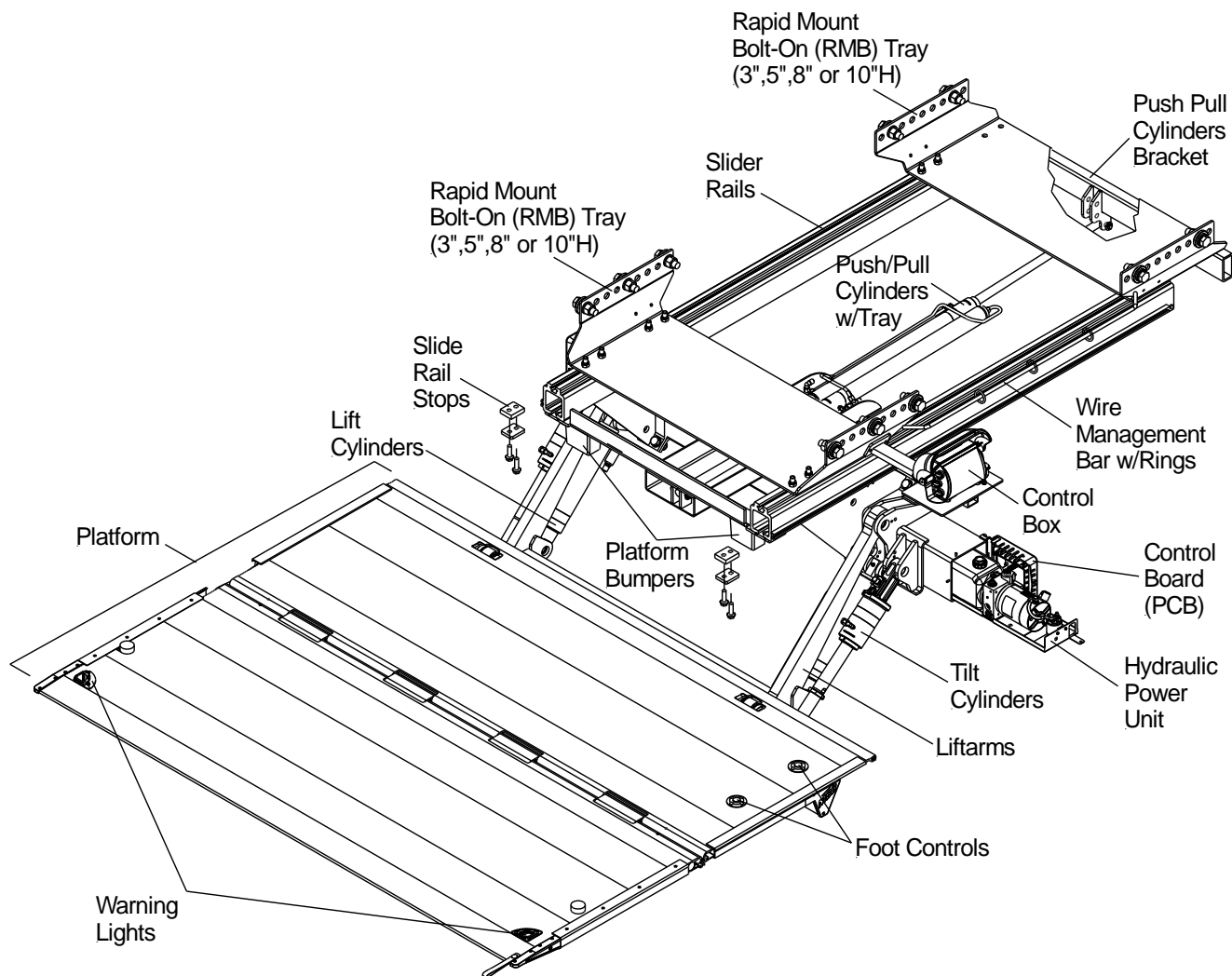
8" Nylon Cable Tie
15 pcs



Fuse Holder
w/15A Fuse
1 pc

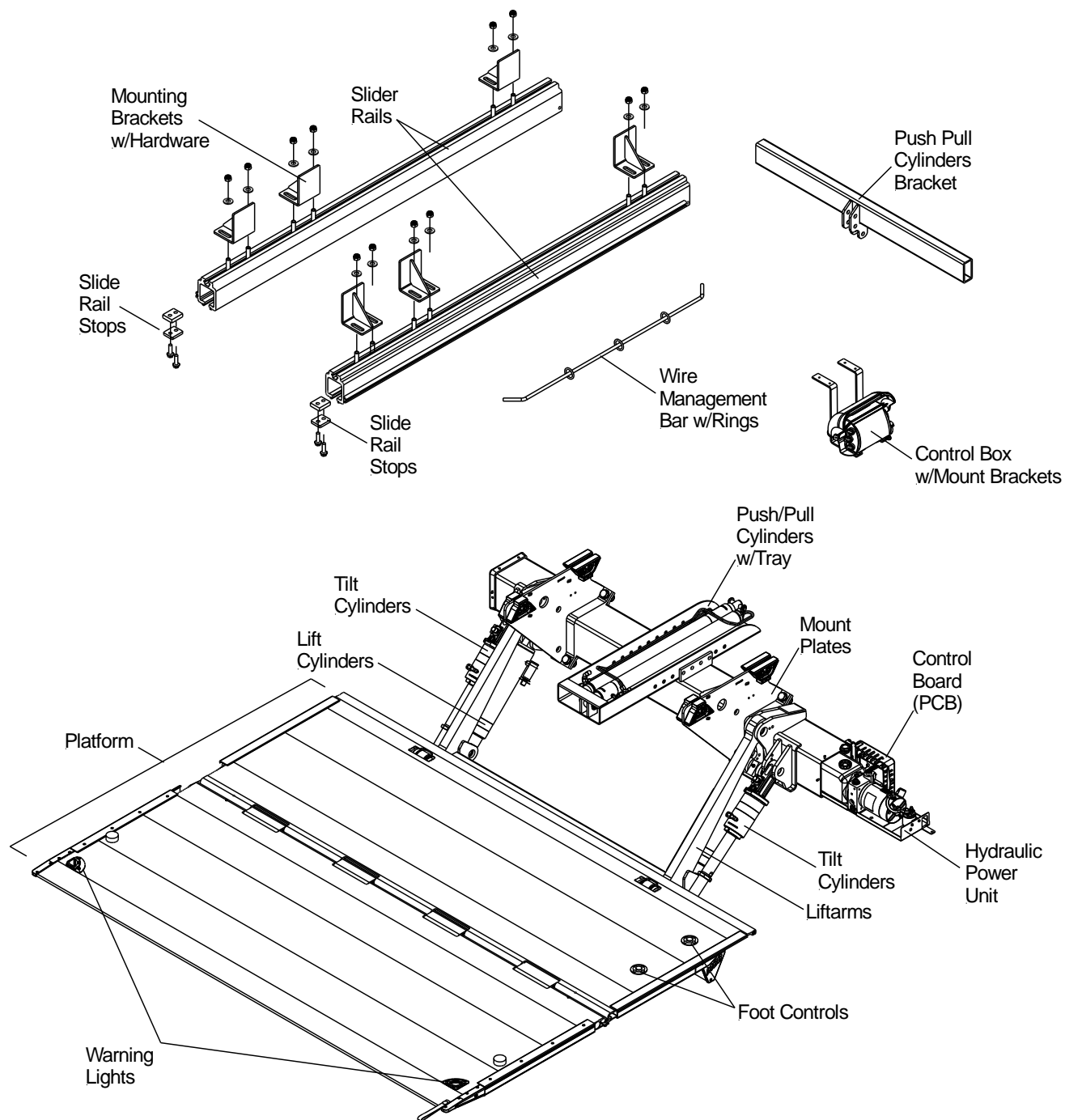
5 General View of Liftgate(s)

5.1 ILUK 33/44/55/60 General Overview for Trailers



*Slider rails and RMB trays ship pre-assembled as shown.
Aluminum Platform Shown.*

5.2 ILUK 33/44/55/60 General Overview for Trucks



All components ship unassembled as shown.

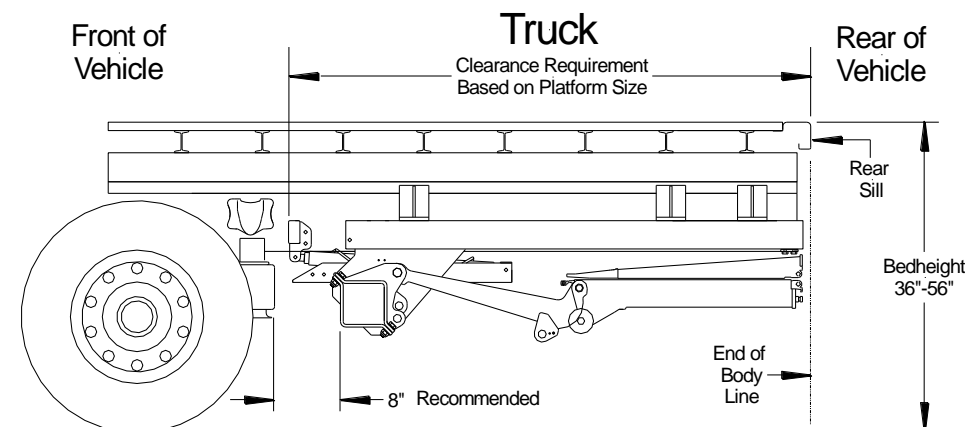
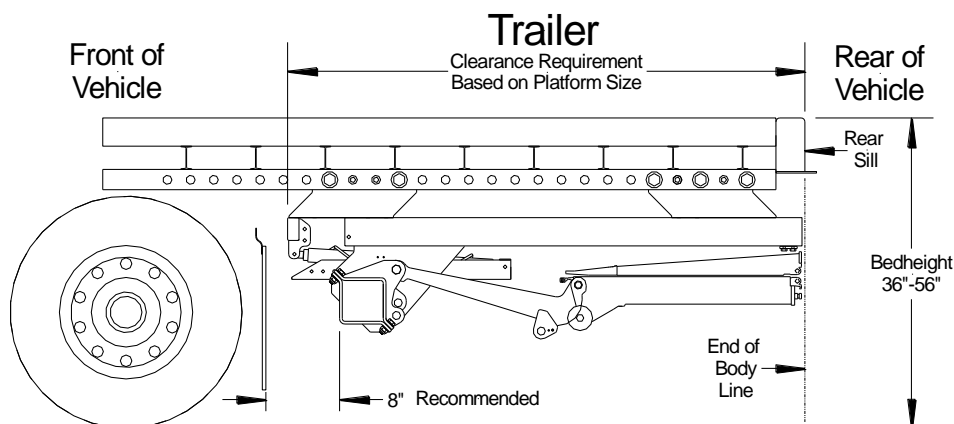
5.3 Minimum Requirement Dimensions

NOTICE

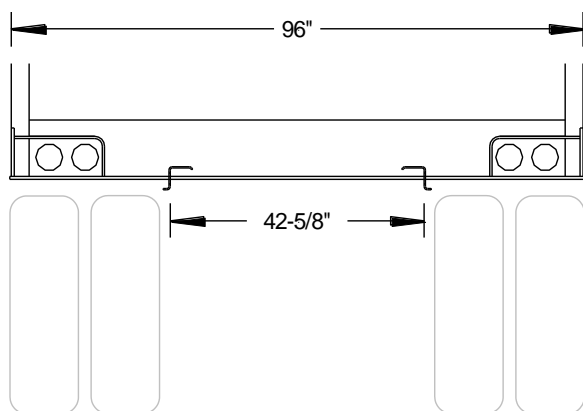
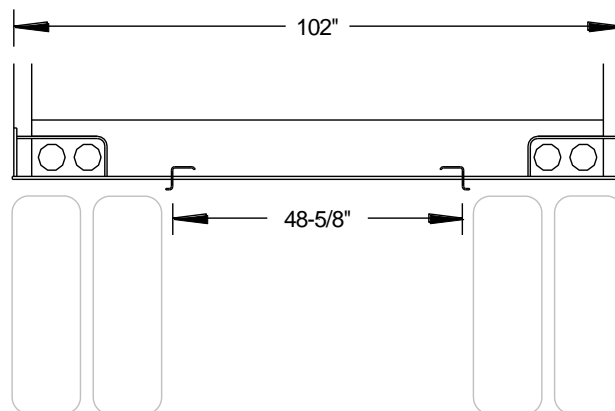
Minimum Bed Height dimensions are ALWAYS MAXIMUM LOADED TRUCK/TRAILER.
Maximum Bed Height dimensions are ALWAYS DRY UNLOADED TRUCK/TRAILER.

- Ensure trailer/truck body does not interfere with installation or operation of the ILUK liftgate series.
- It is not recommended to cut, torch, or remove support materials from trailer/truck. Removing gussets, stiffeners, light rings, or other such support structures may VOID your trailer/truck warranty.
- Call technical support before starting the installation if any questions or concerns arise on mounting dimensions or procedures.
- Minimum clearance required for an ILUK liftgate to install on a vehicle depends on liftgate model and platform size. Spring hangers, air bags, tires, chassis cross members, bogies, etc. must provide enough free space from the rear vehicle sill to the front of the vehicle.

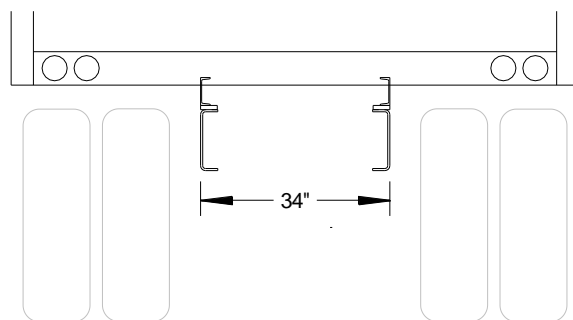
Model	Liftarm	74" Platform	82" Platform	Vehicle Bedheight
ILUK 33	800mm	84"	90"	36" – 56"
ILUK 44/55	700mm*	80"	85"	34" – 47"
ILUK 44/55	800mm	84"	90"	36" – 56"
ILUK 60	900mm	n/a	95"	40" – 60"



- Dimensions shown do not guarantee the liftgate will install specially on the lower range bedheight dimensions. An installation drawing/layout can be done to determine the best fit and function for the liftgate in these instances.
- All dimensions are taken from the vehicles rear sill towards the front of the vehicle, except for side loaders.
- Recommended clearance from end of bogie to 7"x7" mount tube is 8" minimum.
- For Trucks: Spring hangers or air bags must clear the minimum clearance requirements.
- Body extensions (i.e. channels, tubes) can be added to roll up door vehicles to help clear any interference when vehicle does not meet the clearance requirements. Body extensions for swing door vehicles do not apply.
- Undersliders should never protrude outside the end of body in stored position.
- *700mm liftarms are available for ILUK 44/55 with low vehicle bedheights (i.e. Drop Deck Trailers, Kentucky Trailers, bedheights below 40").
- Trailer sliding tandem rails should be 42-5/8" wide for 96" wide trailers and 48-5/8" wide for 102" wide trailers. If these dimensions do not apply, a custom mounting solution will be required. Contact Palfinger Liftgates for custom solutions.

**Rear View of Trailer****Rear View of Trailer**

- Truck chassis frame width should be 34". If the dimension does not apply, a custom mounting solution will be required.

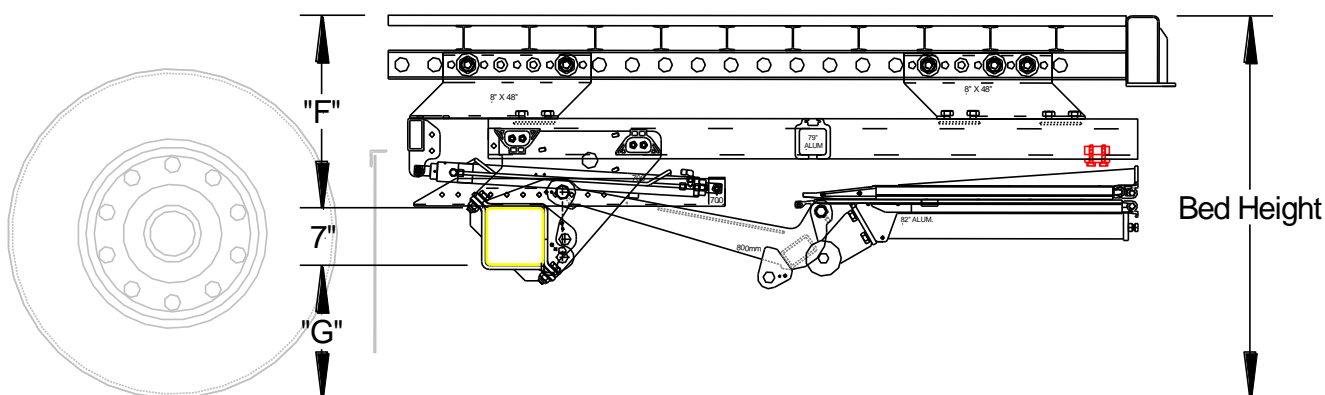
**Rear View of Truck**

6 Mounting Dimensions

NOTICE

- Decrease ground clearance only to clear obstructions (i.e. fuel tanks, cross members, hitches, etc.) **WITHOUT EXCEEDING MAXIMUM "F"**.
- Minimum bed height is when truck/trailer is loaded to Maximum GVW (Gross Vehicle Weight).
- "F" dimension: Mount and Ground clearance always relate to each other on a set floor height. If the "F" dimension is increased for a shorter mount clearance, the ground clearance will decrease.

Liftgate Model	Liftarm	Bed Height	F Dim.		G Dim.	
			Min.	Max.	Min.	Max.
ILUK 33	800	36"-56"	18"	28"	10"	20"
ILUK 44/55	700	34"-47"	16"	22"	11"	18"
ILUK 44/55	800	36"-56"	18"	28"	10"	20"
ILUK 60	900	40"-60"	21"	32"	10"	21"



G Dim = Bed Height – F Dim. – Mount Frame Height
Never exceed any of the dimensions from the table when installing the liftgate.

7 Dimension Sheets



Trailer Chassis Dimension Sheet

Customer Information

Quote#/SO#: _____
 Company: _____
 Phone: _____
 Email: _____ @ _____

Liftgates Information:

Model: _____

Capacity: _____

Platform Size: _____

Platform Material: _____

Trailer Information

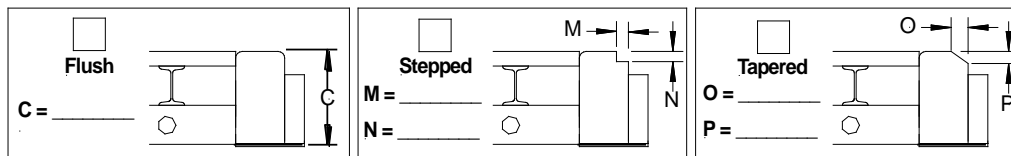
Trailer Specifications:	Type of Body (check applicable) ✓	Type of Rear Door (check applicable) ✓
Manufacturer: (ex. Utility)	Van	Flip-Up
GVWR: (ex. 68,000 lbs)	Flatbed	Roll-Up
Length: (ex. 53ft)	Reefer	Swing
Width: (96", 102")	Other (specify) _____	Other (specify) _____

Trailer Dimensions

A = Bedheight: Top of trailer floor to level ground (with airbags up):.....

B = Top of floor to bottom of trailer cross member:.....

C = Rear sill height (Top of floor to bottom of buck plate): If Stepped sill complete M,N; If Tapered sill complete O, P.



D = Crossmember height:.....

E = Tire to end of vehicle body:.....

F = Bogie to end of vehicle body:..... Sliding Suspension? Yes _____ No _____
 If Yes complete G, H, I, K, and L dimensions

G = Inside horizontal width of sliding suspension angles:.....

H = Diameter of sliding suspension holes:.....

I = Hole spacing:.....

J = Bottom of crossmembers to bottom of sliding ramp box, if applicable:.....

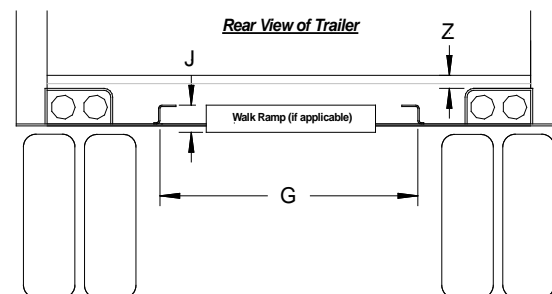
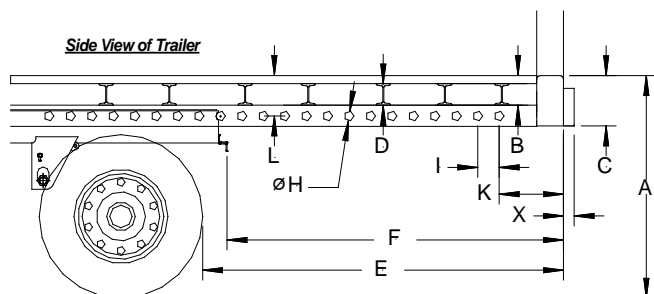
K = Rear sill face to first slider hole:.....

L = Top of floor, where liftgate platform will meet floor, to the center of the trailer slider holes:.....

X = Eyebrow depth:.....

Z = Top of floor, where the liftgate platform will meet the top of the eyebrow:.....

Notes:



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Truck Chassis Dimension Sheet

Customer Information

Quote#/SO#: _____
 Company: _____
 Phone: _____
 Email: _____ @ _____

Liftgates Information:

Model _____
 Capacity _____
 Platform Size _____
 Platform Material _____

Truck Information

Trailer Specifications:	
Manufacturer: (ex. Hino)	
GVWR: (ex. 68,000 lbs)	
Length: (ex. 53ft)	
Width: (96", 102")	

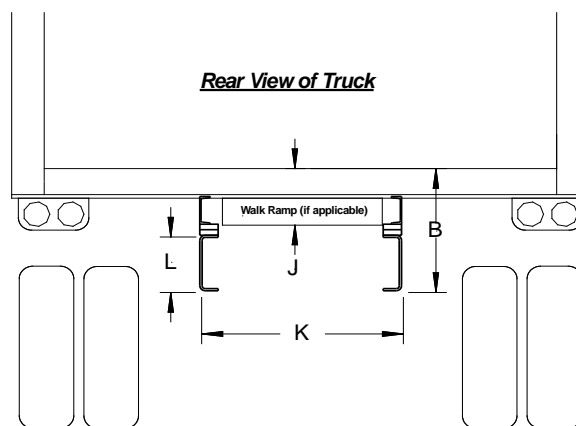
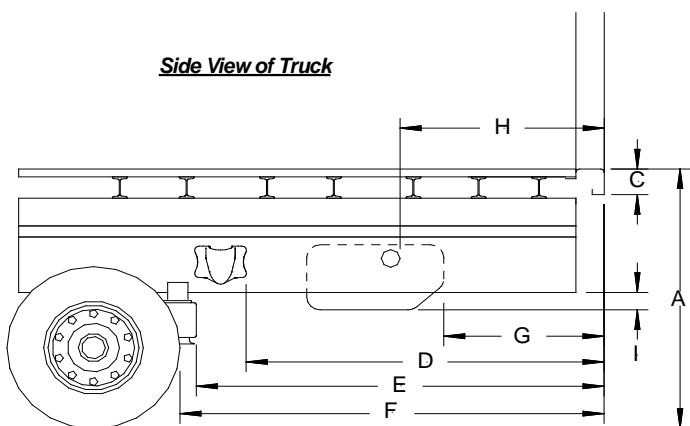
Type of Body (check applicable)	✓
Van	
Flatbed	
Reefer	
Other (specify) _____	

Type of Rear Door (check applicable)	✓
Flip-Up	
Roll-Up	
Swing	
Other (specify) _____	

Truck Dimensions

A = Bedheight: _____ Loaded Bedheight: _____
 B = Top of floor to bottom of frame: _____
 C = Rear sill height: _____
 D = Spring hanger to end of body (if applicable): _____
 E = Air bag suspension to end of body (if applicable): _____
 F = Tire to end of vehicle body: _____
 G = Gas tank to end of body (if applicable): _____
 H = Fuel filler hole to end of body (if applicable): _____
 I = Bottom of frame to bottom of gas tank (if applicable): _____
 J = Top of floor to bottom of sliding walk ramp (if applicable): _____
 K = Frame Width: Width of chassis frame: _____
 L = Frame Height: Height of chassis frame: _____

Notes:

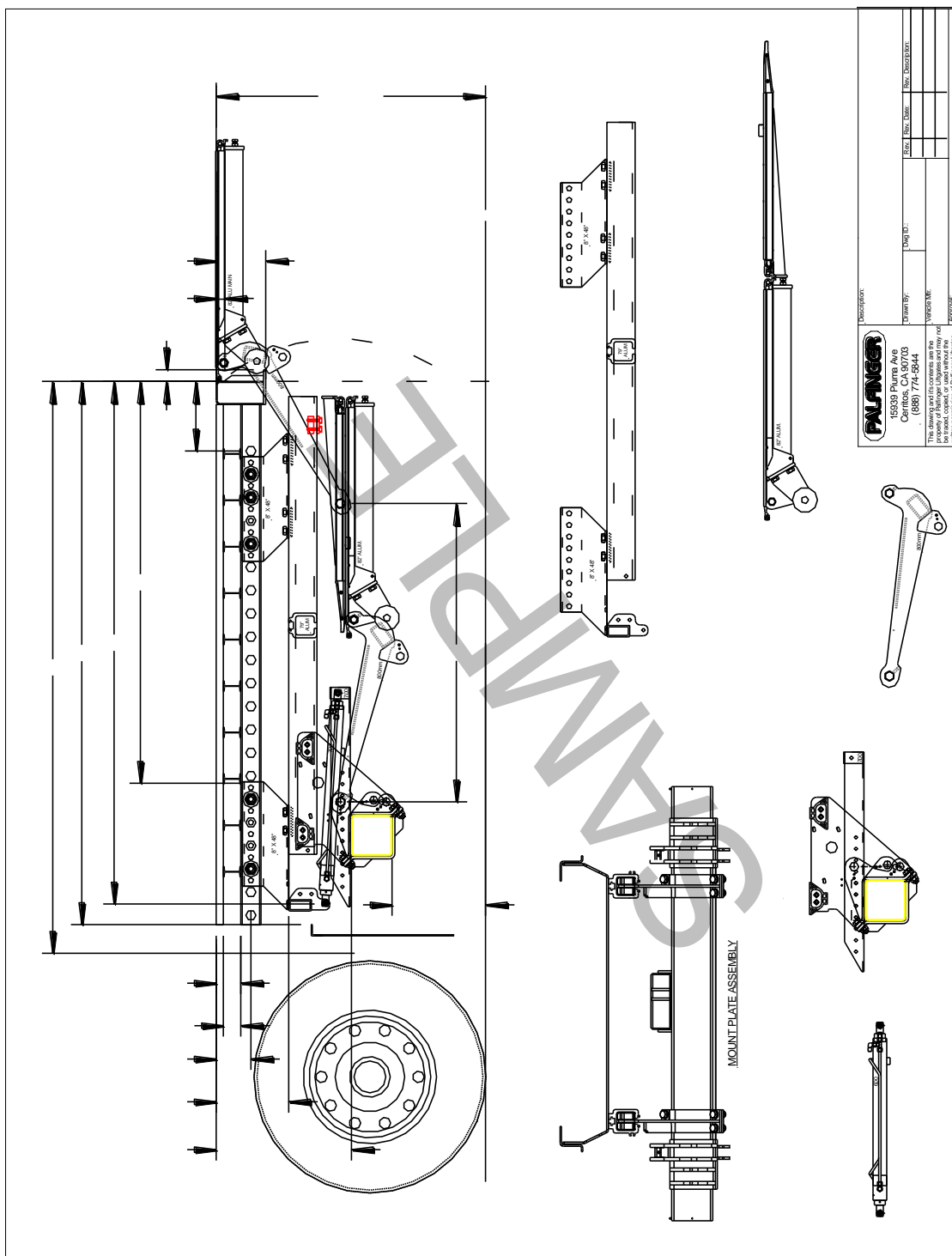


90-9813-003_b

8 Installation Drawing

NOTICE

Palfinger Liftgates will always provide an Installation Drawing for each liftgate depending on the vehicle information provided from the dimension sheets in Section 6. Prior to beginning an installation, its highly recommended the Installation Drawing is reviewed and understood in its entirety before the installation begins. **Never start the installation if the vehicle or liftgate do not match the Installation Drawing.**



9 Chassis and Body Preparation

9.1 Trucks

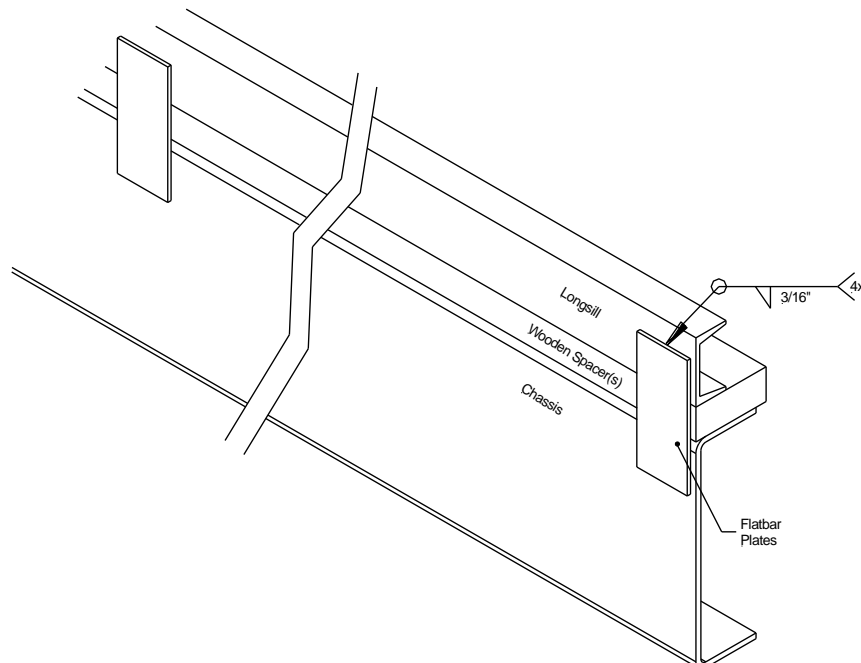
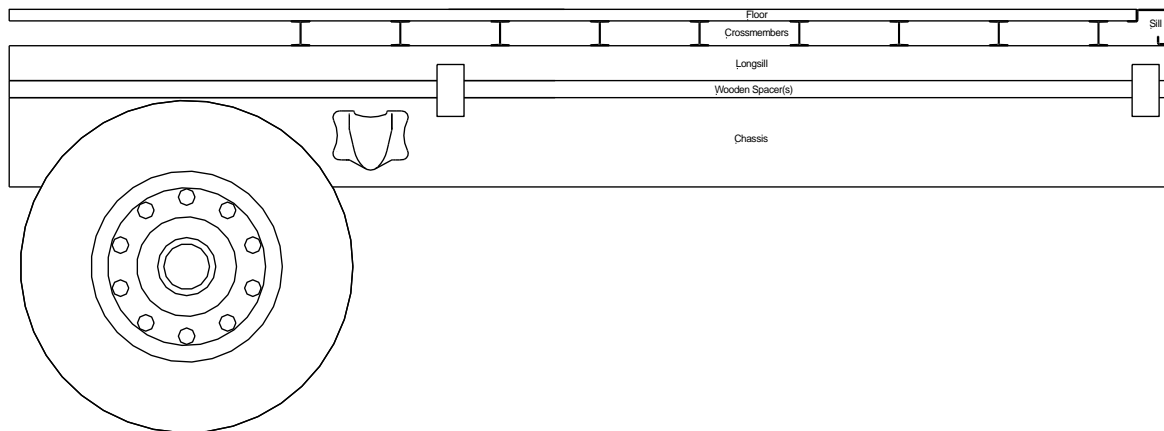
NOTICE

Determine the correct mounting clearance according to your specific liftgate and chassis.

- With long overhangs it is even more important to maintain Max ground clearance.
- GROUND CLEARANCE = BOTTOM OF LIFTGATE FRAME TO GROUND
- Determine if you need to move chassis U-bolts or if you have any other interferences, then proceed with installing the liftgate slide rails to the frame.

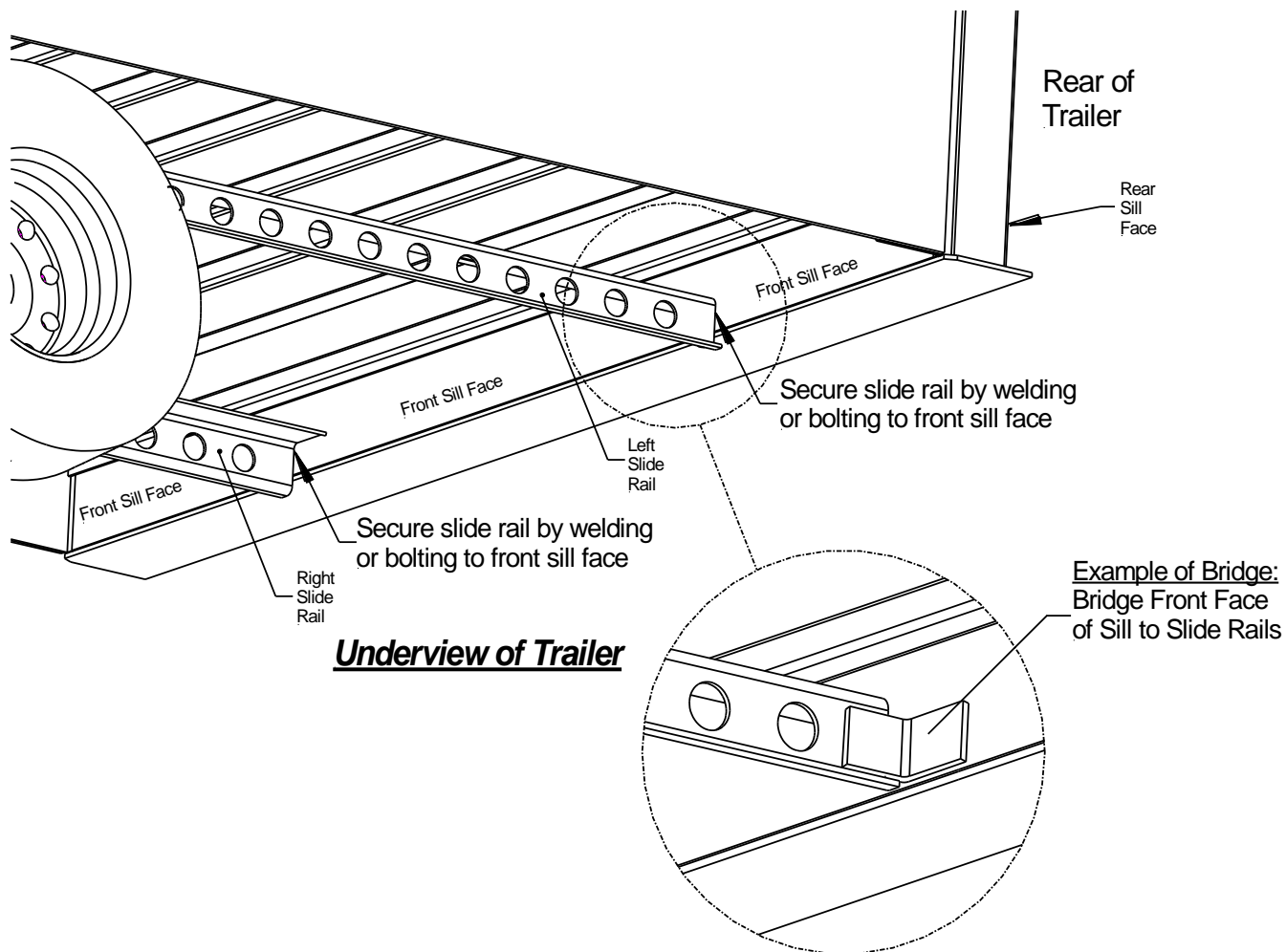
IMPORTANT!

- Before starting the installation make sure body longsills are connected to truck chassis.welded with flatbar plates and secured against forward movement of the body.
- If body and frame are not connected liftgate might push body forward.



9.2 Trailers

The ILUK Underslider Liftgates are mounted to the trailer slide rails. During liftgate operation, there are lot of forces on the trailer slide rails, especially in the rear lift position of the liftgate. It is important to secure the rails at the rear of trailer to prevent them from starting to separate in this area. When the rails do not reach the rear and a gap remains, the gap must be bridged to connect the rails to the sill.



9.3 Vehicle Sill

Refer to the Installation Drawing provided by Palfinger Liftgates for complete sill cut outs.

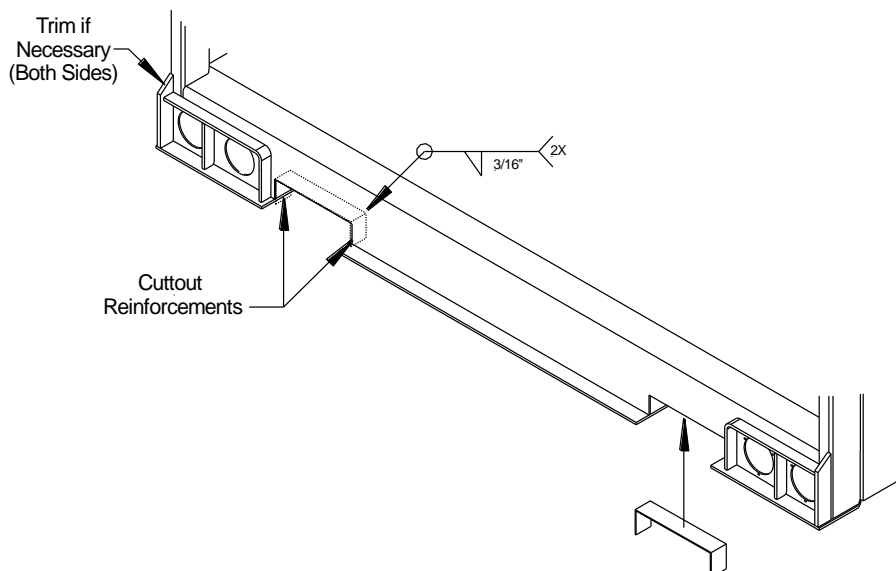
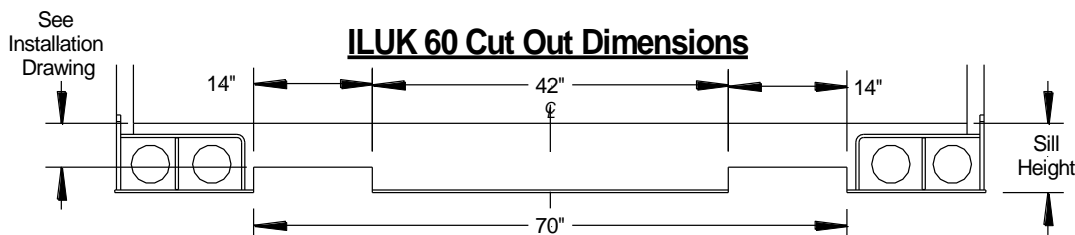
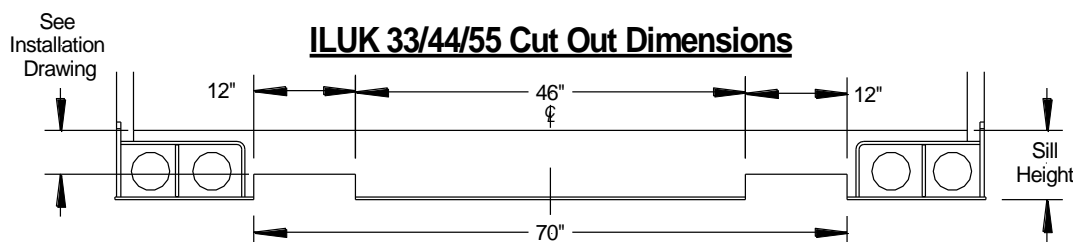
To assure that the gate is reaching the body floor, you need to cut out the rear sill of your truck/trailer.

NOTICE

- If sill is **less than 4"** tall, No sill cut out needed.
- If no cut out height is determined in drawing, cut out for best fit. **Keep at least a minimum of 4" of sill.**
- On trailers, you have to check the eyebrow clearance, and in case of interference cut eyebrow down until platform clears.
- The eyebrow cut out can be done when gate and platform are installed and you raise up gate for the first time. That gives the opportunity to keep as much of the eyebrow as possible to keep rear frame strength.
- Be aware that notching of the rear sill may void warranty.

CAUTION

- Reinforce every cut out of the sill to regain sill strength, required by truck/trailer OEM.



10 Liftgate Installation

WARNING

Never work under platform without safety supports

CAUTION

High heat from welding can damage components within the heated area.

NOTICE

On Trailers you have to check the eyebrow clearance and in cases of interference cut eyebrow down until platform clears.

The eyebrow cut out can be done when the gate and platform are installed and you raise up the platform to bed level for the first time. The opportunity to keep as much of the eyebrow as possible to keep rear frame strength.

A proper preparation of the truck/trailer sets the basics for a safe, clear and fast installation process and assures a proper function of the liftgate without damage to the vehicle or liftgate.

All dimensions on the installation drawing are taken from the rear sill face.

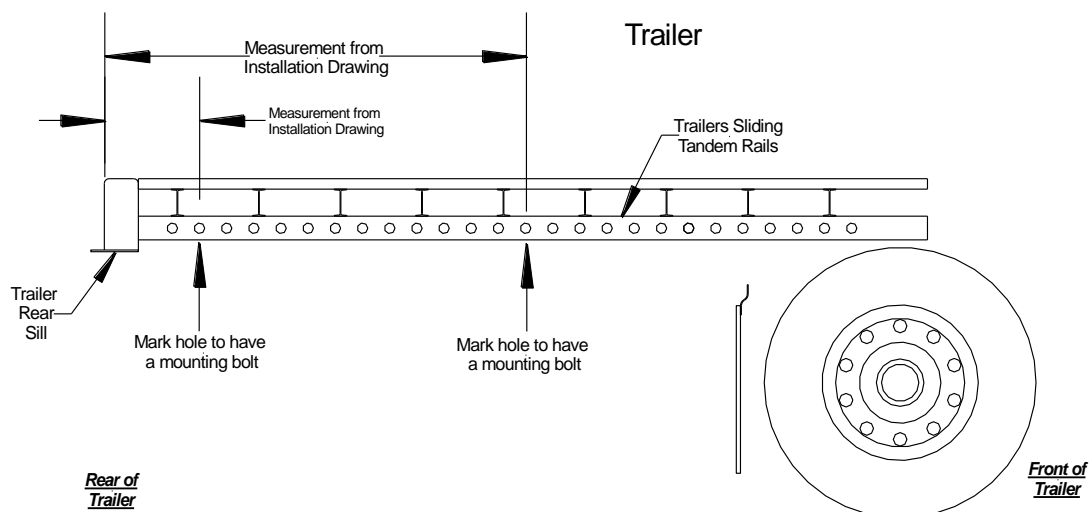
10.1 Trailer Installation - Rapid Mount Bolt-On (RMB) Trailer Subframe

NOTICE

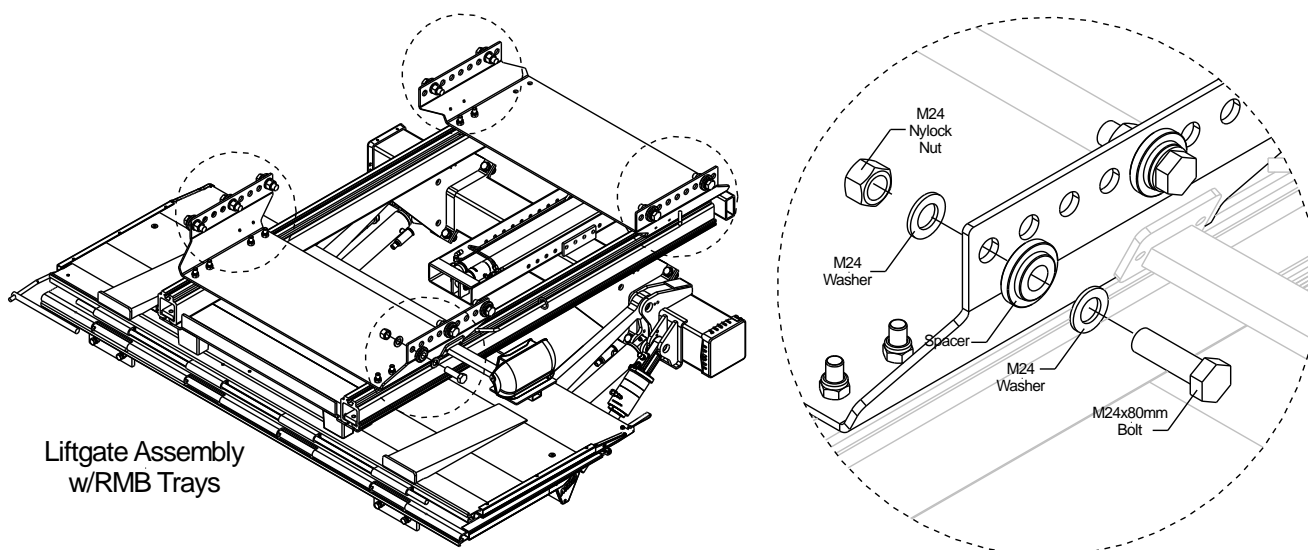
The RMB subframe is available in 5", 8" and 10" in height. Height of subframe (in each case) is determined by vehicle bedheight. Palfinger Liftgates will choose the optimal subframe height based on the trailer design from the Trailer Dimension Sheet supplied by the customer. Having the installation drawing in hand during the installation can help in having a clean and fast installation.

Steps:

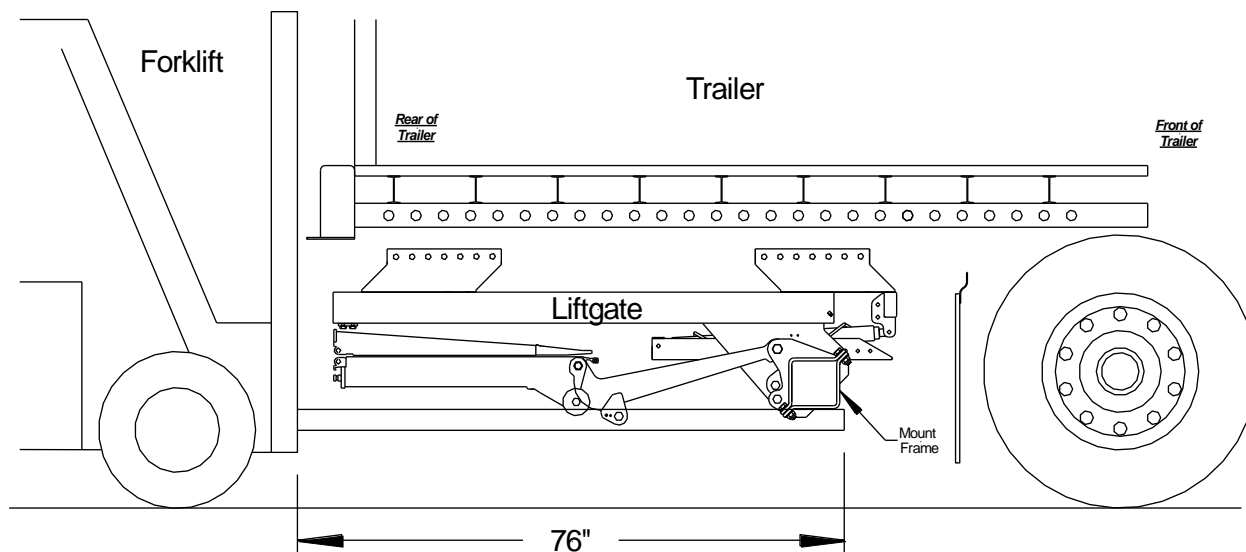
1. Use the installation drawing to identify where the subframe holes will bolt-on to the trailers existing sliding tandem rails. Follow the installation drawing measurements to measure and mark the holes on the trailers sliding tandem rails that will be used.



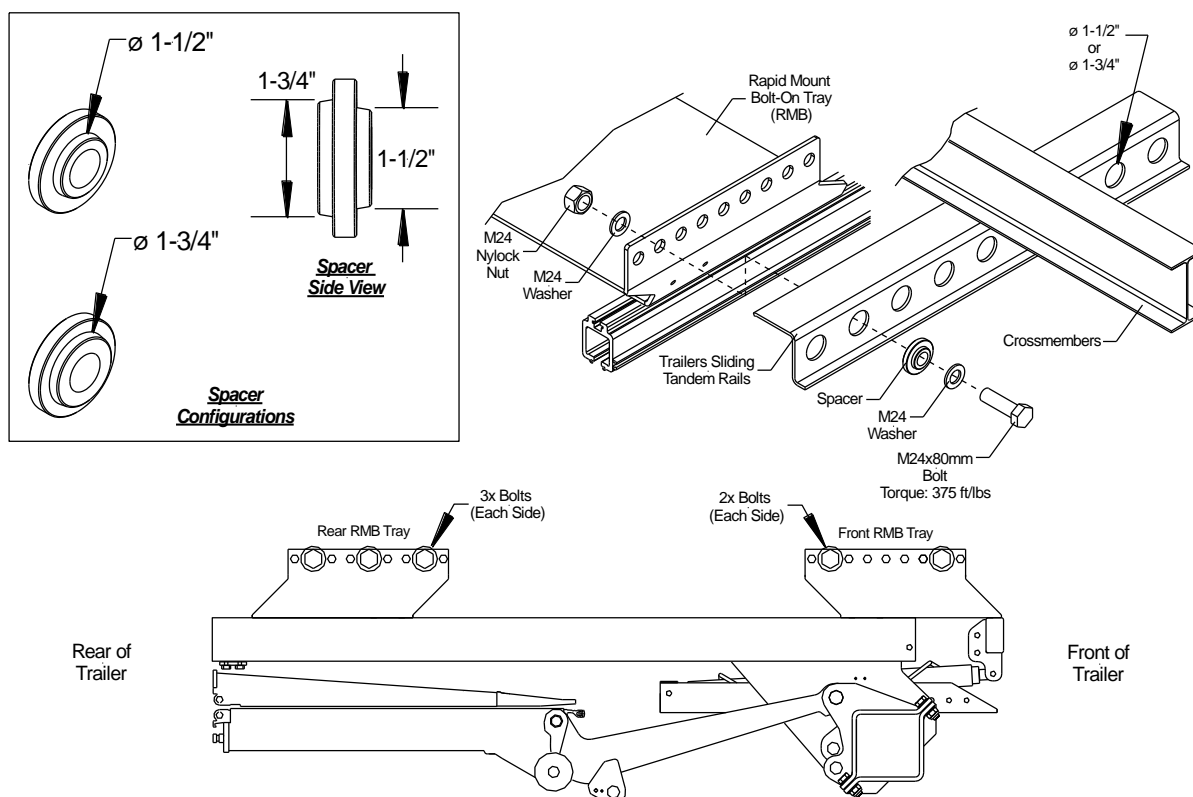
2. Remove the ten M24 bolts, nuts, washers, and spacers that are attached to the RMB subframes. This hardware will be used to mount the liftgate to the trailer, do not discard. Use the installation drawing to identify where the subframe holes will align with the tandem rail holes.



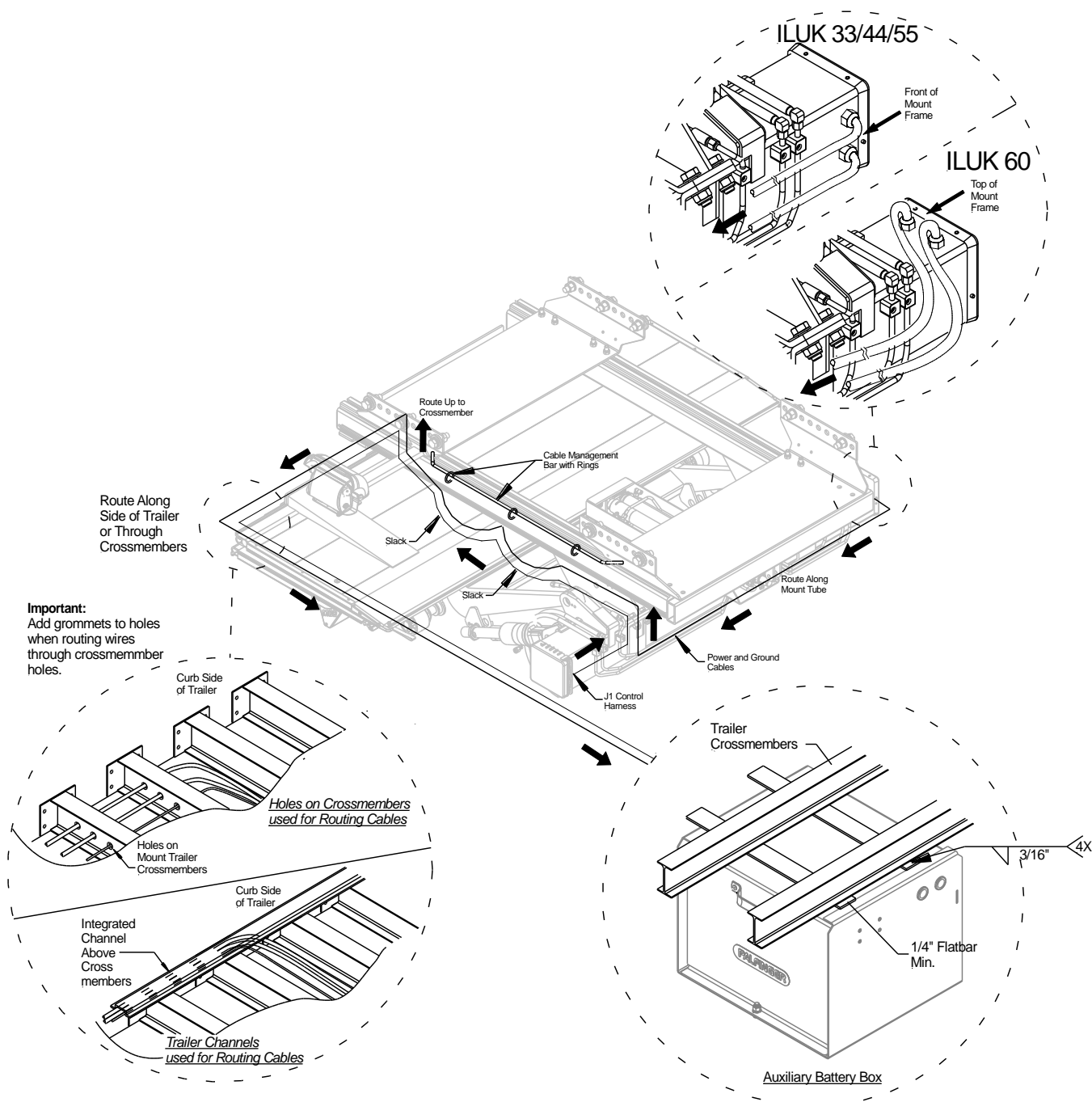
3. Use a forklift or equivalent with a minimum of 76" forks or make a tubular frame extension for the forklift arms that reach the liftgates mount frame. Do not damage any of the liftgates valves or cabling while maneuvering the liftgate under the vehicle. Align the marked holes from Steps 1 and 2 and raise the forklift forks slowly up until the holes are concentric with each other.



4. Before installing any hardware, verify the hole diameter on the trailers sliding tandem rails. The spacer is designed to be installed in $\varnothing 1\frac{1}{2}$ " and $\varnothing 1\frac{3}{4}$ " holes. Use the appropriate side of the spacer to install in the orientation shown. The rear RMB tray requires three mounting bolts and the front RMB tray requires two mounting bolts. Reference the installation drawing for bolt locations. Install all ten bolts, spaces, nuts, and washers to secure the liftgate to the trailers sliding tandem rails. Verify mount tube and rails are square to the trailer and torque all bolts to 375 ft/lbs.



5. Adding Electrical Power to Liftgate: Route power, ground, and J1 cables as shown below. The ILUK liftgates have a ground and power cable located at the left (street) side of the mount frame. These power cables will power the pump and motor located inside the mount frame (on the right/curb side). The ILUK liftgates also have a PC Board that requires power. The PCB controls all the liftgates functions and features necessary to proceed with the installation. See Electrical Installation Section 15 on how to apply power.

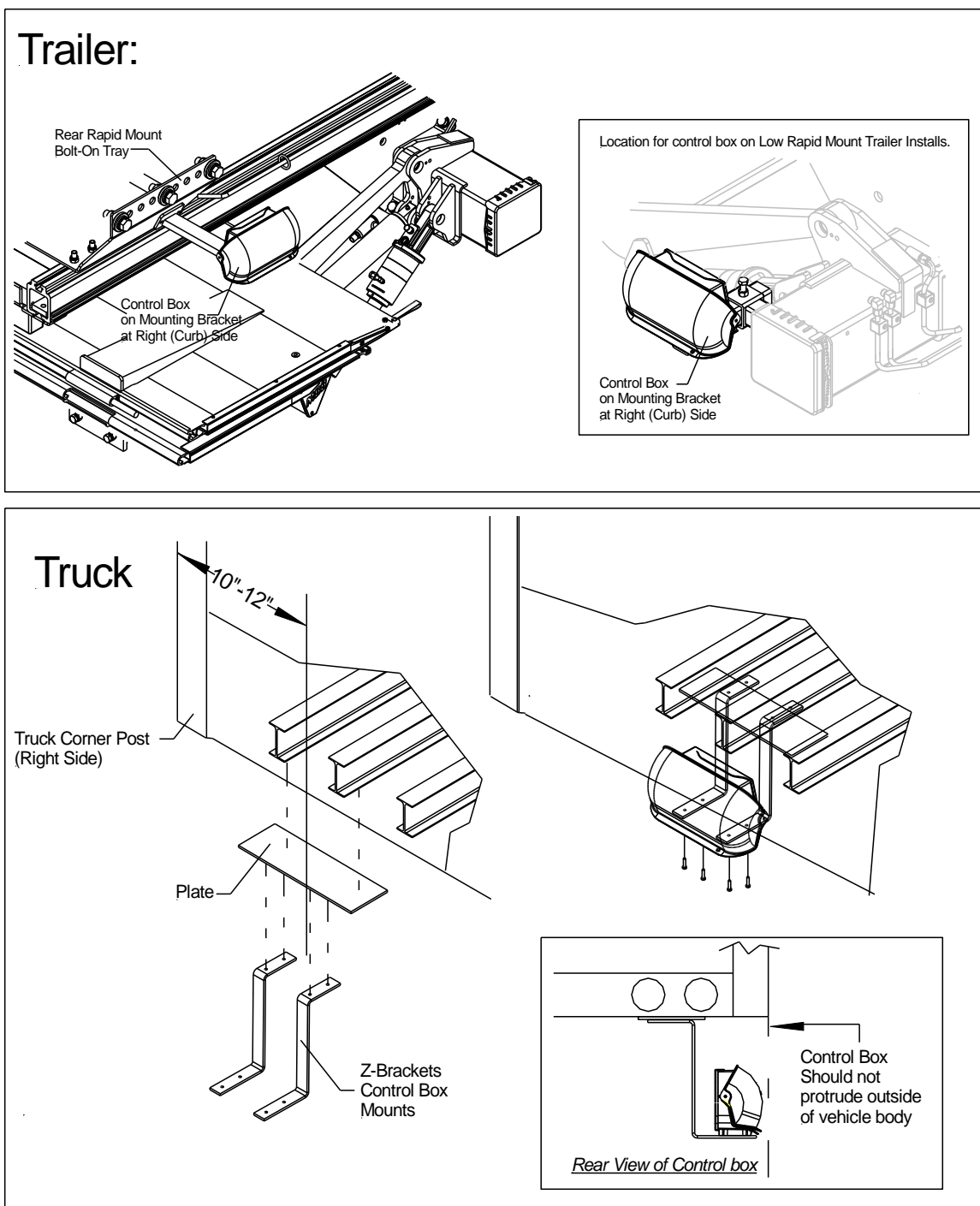


To maintain the best possible power supply install the auxiliary batteries as close as possible to the liftgate. Trailer installations always have an auxiliary battery kit with a minimum of 2 batteries recommended.

6. Control Box Installation:

A. Trailers: The majority of trailers will typically have the control box installed on the rapid mount bolt-on trays as shown. No additional installation is required.

B. Trucks: Control Box installations for truck vehicles require the installation of the a pair of “Z-Brackets”. These brackets can be bolted or welded underneath the truck crossmembers, as shown below. When installing the control box always make sure the control box is installed withing the vehicle body. The control box should be positioned approximately 10” – 12” from the rear sill to have a visual of the platform as the liftgates is operated.



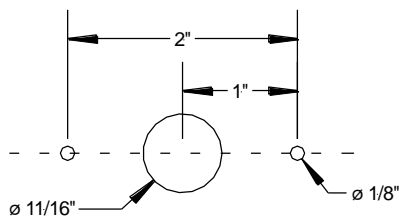
7. Liftgate On-Off Switch:

7a. Truck Installation:**NOTICE**

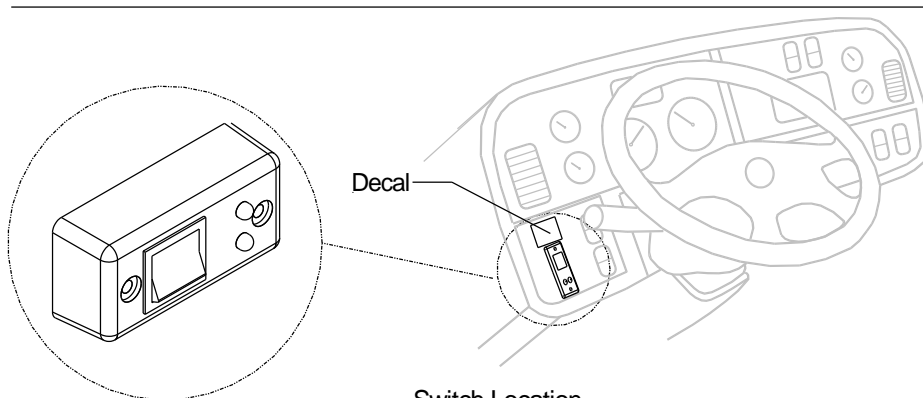
Liftgate Cab ON/OFF Switch **MUST** be installed and in clear view of driver.

Steps:

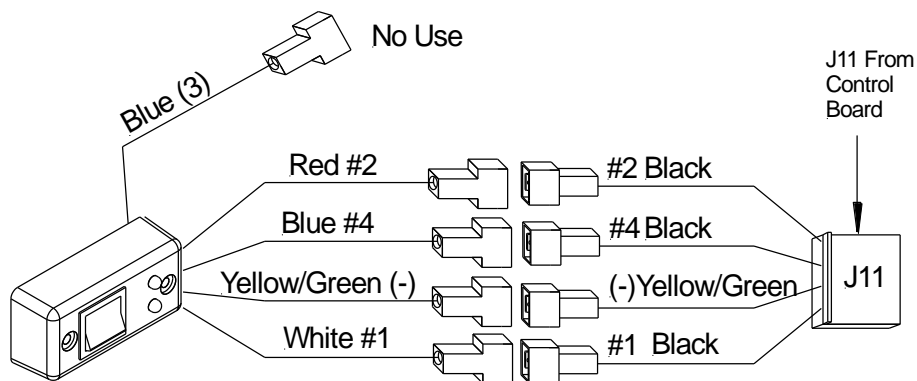
1. Route Harness: Route and secure the J11 wire harness every 12" against the frame with frame clamps or equivalent along the vehicle frame.
Check Wire Clearance: Verify wire harness is clear of all moving parts and securely tied up.
2. Place the switch where it can conveniently be seen and reached from the driver's seat as well as from the ground.
3. Wire the ON/OFF switch with the J11 wire harness as shown.
4. Cover Connections: Heat shrink all wire connections and splices.
5. Decal: Apply the decal next to the switch.



Mounting Hole Pattern



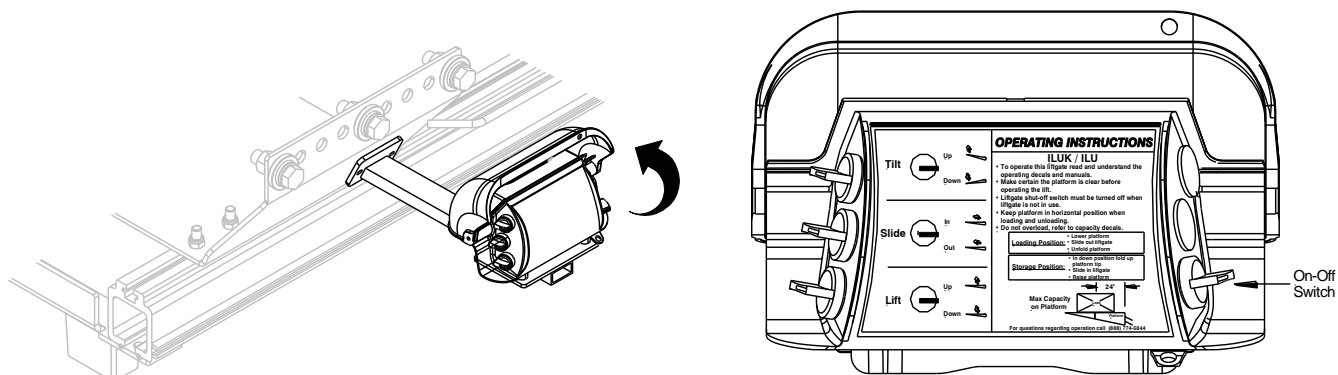
Switch Location



Switch Wiring

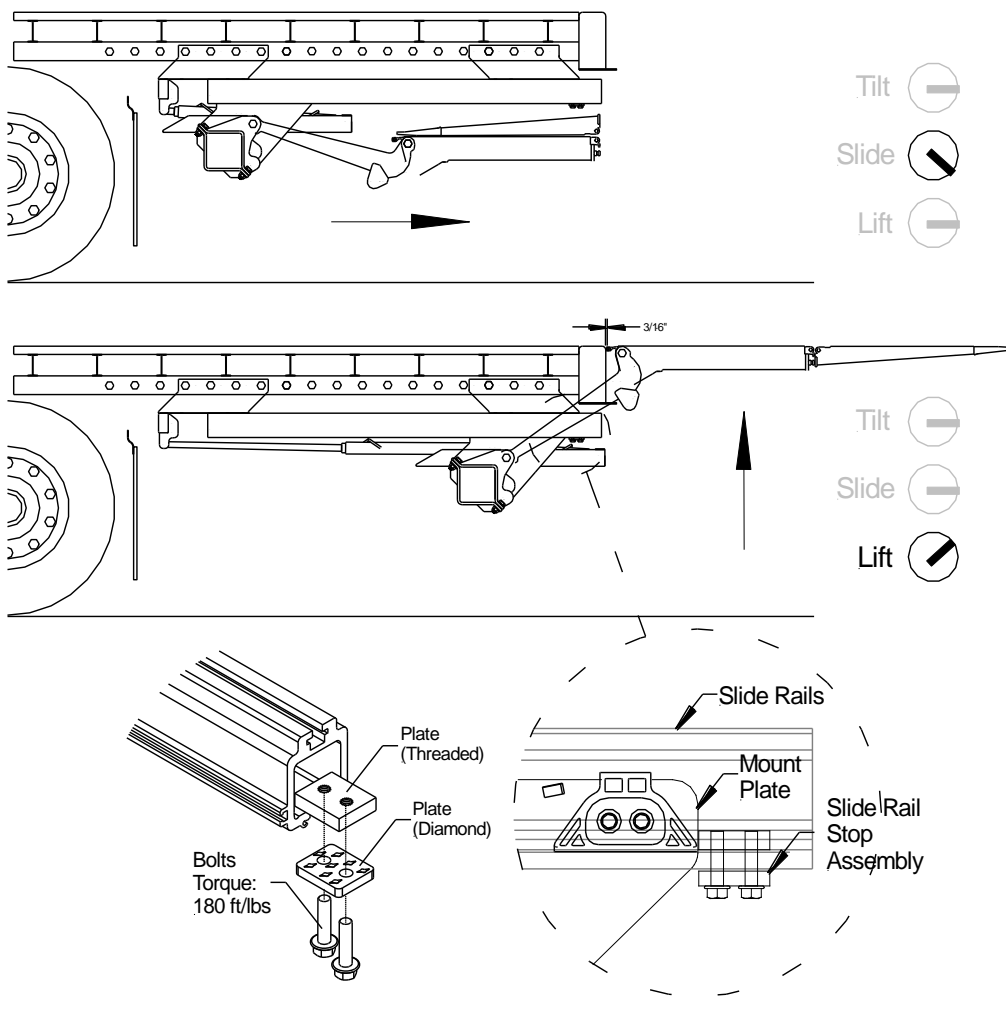
7b. Trailer Installation:

Trailer units do not have a cab switch. The on-off switch is integrated into the control box. The switch is on the right hand side in the control box. It is prewired and does not need any additional work.

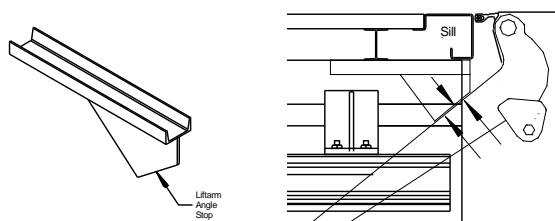


8. Open the control box and turn the ON/OFF switch ON. Use the Lift Down switch to lower the platform approximately 5" from the bumper. Use the Slide Out switch to slide the gate out approximately 7"-8". When sliding the gate out do not slide the mount tube complete out of the rails. Use the strap on the tip section to manual open. Use the Lift Up switch to raise the platform to bedheight. Leave a 3/16" gap between the sill and platform, this can be adjusted by using the Slide In and Out switch. Once platform is in place, install the rail stops in the orientation shown to prevent any misalignment of the platform. Torque rail stop bolts 180 ft/lbs.

Liftarms Upstops: Make sure the platform is aligned and flush with the floor/sill. Upstops must be installed to avoid damage to platform and sill.



Example of Fabricated Upstop for Liftarms



9. Basic trailer installation is now complete. Proceed to Section 11.

10.2 Truck Installation – Rapid Mount Weld-On Brackets

NOTICE

Determine the correct mounting clearance according to your specific lift and chassis.

- With long overhangs it is even more important to maintain Max ground clearance.

GROUND CLEARANCE = BOTTOM OF LIFTGATE FRAME TO GROUND

- Determine if you need to move chassis U-bolts or if you have any other interferences, then proceed with installing the liftgate slide rails to the frame.

IMPORTANT!

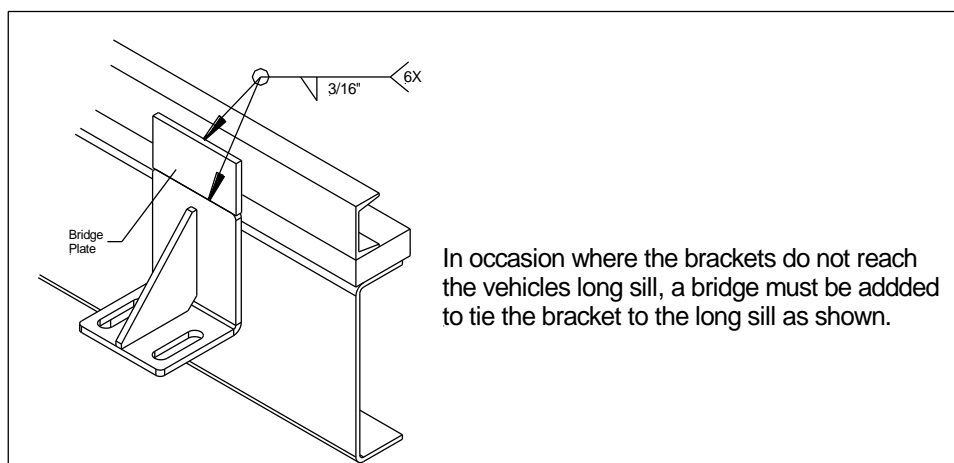
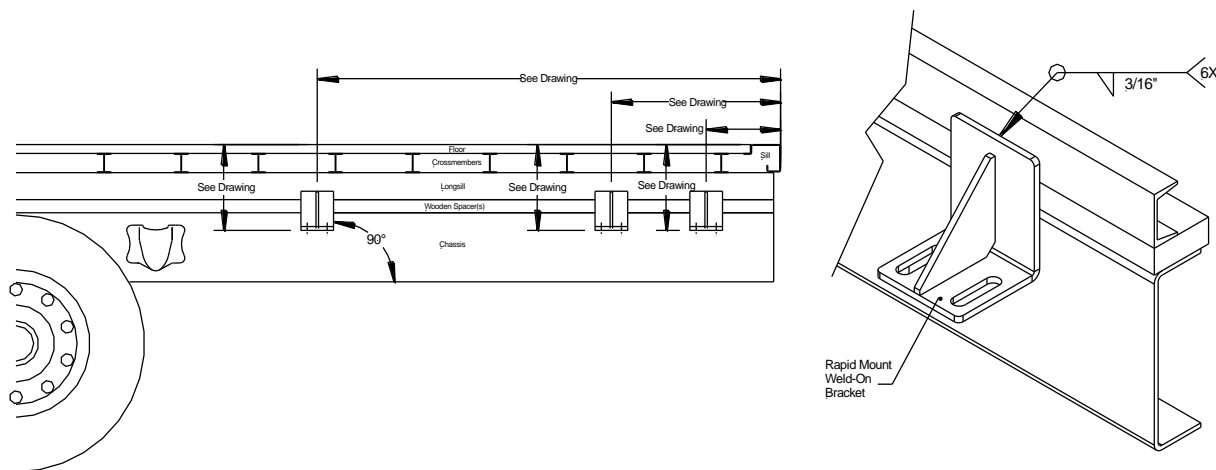
- Before starting the installation make sure body longsills are connected to truck chassis welded with flatbar plates and secured against forward movement of the body, reference Section 9. If body and frame are not connected liftgate might push body forward.

NOTICE

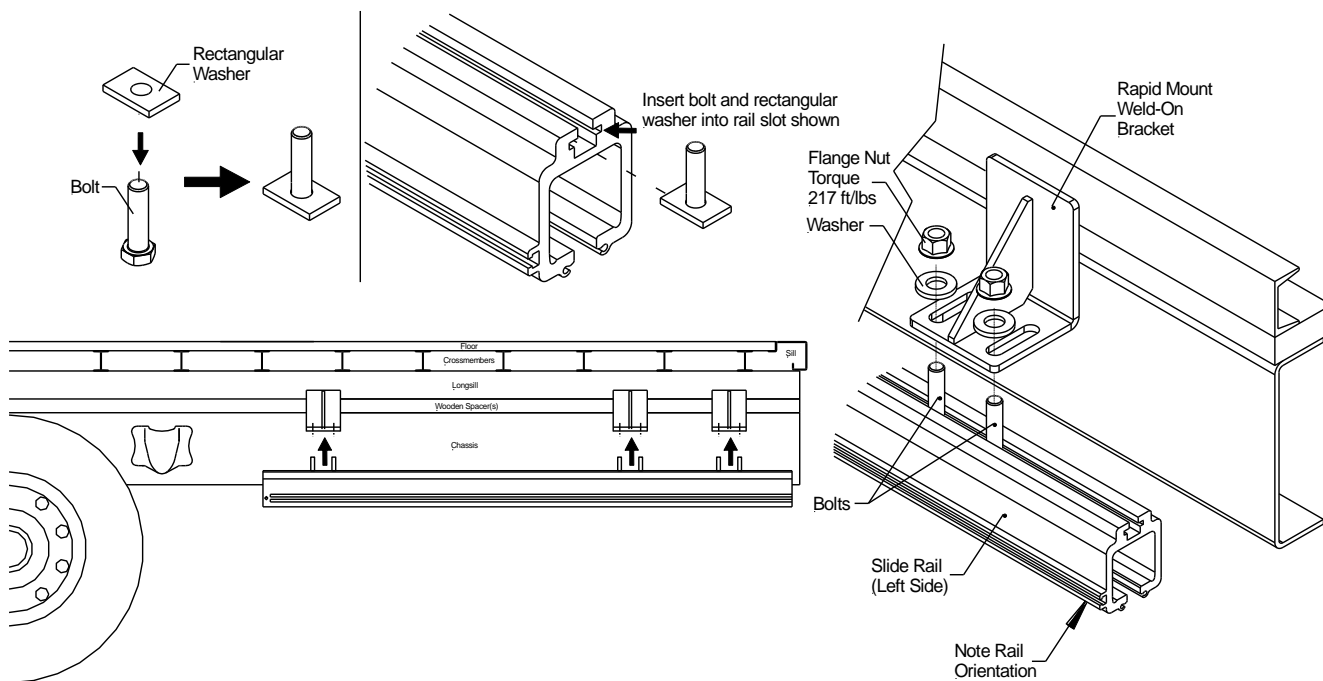
Make sure the specific install drawing sent with the liftgate matches the truck and liftgate you're about to install.

Steps:

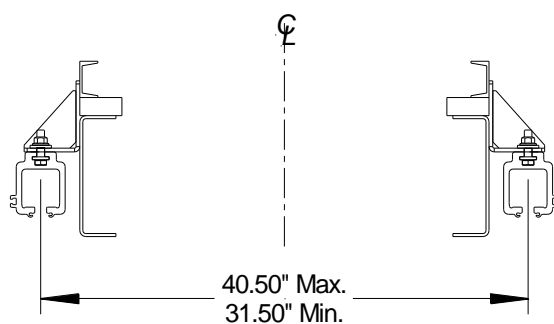
1. Install three Rapid Mount Weld-On Brackets on each side of the vehicle according to drawing provided with the liftgate.



2. Insert a hex bolt into the rectangular washer. Insert the hex bolts and rectangular washers into the slide rails slots. Secure the rails to the Rapid Mount Bolt-On Brackets with the nylock nuts, but do not tighten completely as adjustment is required. Repeat installation of rails on the other side make sure the rails are parallel to each other as the liftgate will not slide properly otherwise. Torque nuts to 217 ft.lbs.

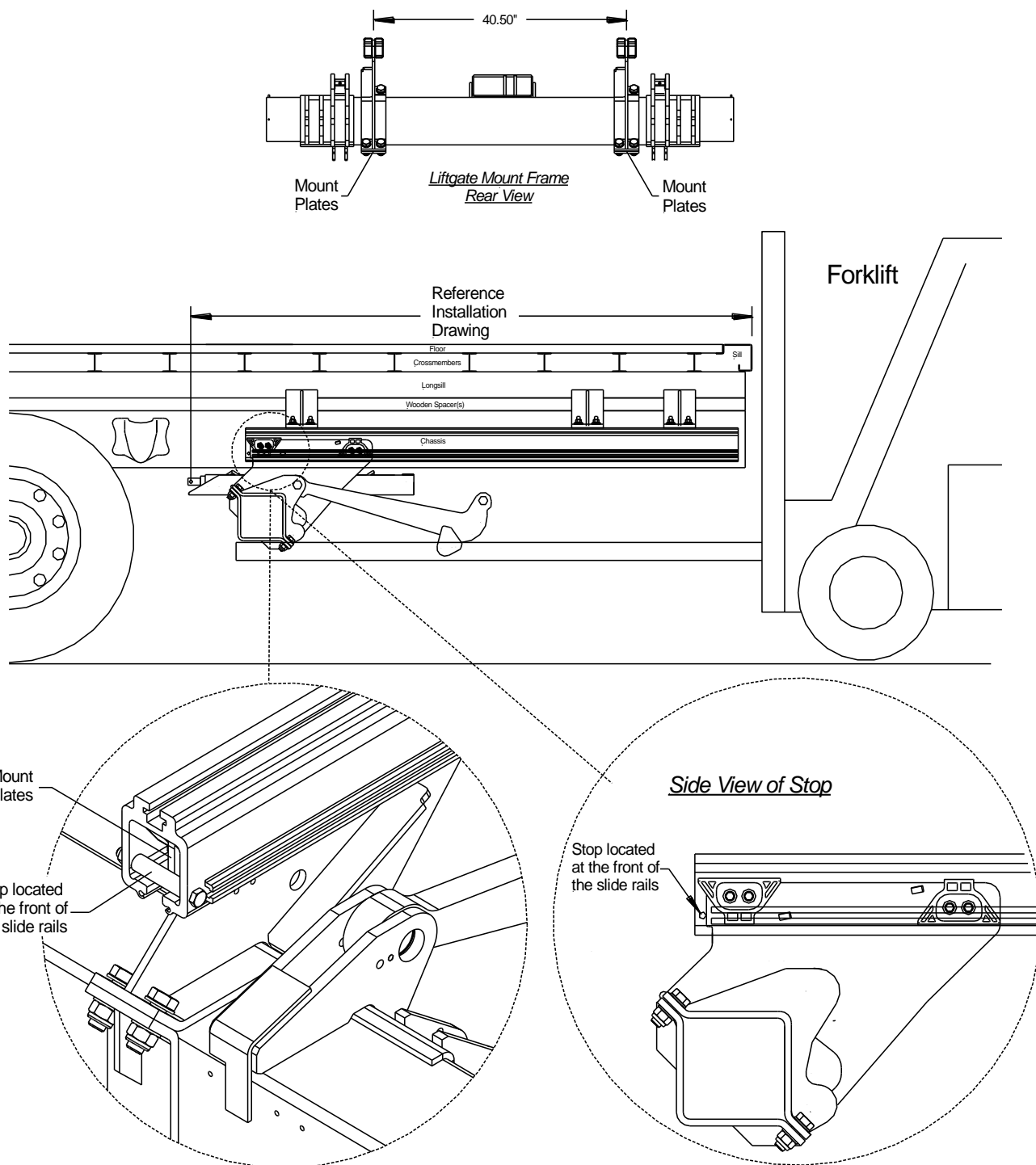


Space the rails to the dimension specified in the installation drawing. Typically 40.50" on center is most common, but rails can be spaced from 31.50" to 40.50". After spacing the rails, torque the nuts to 217 ft/lbs securing the two Slide Rails to the six Rapid Mount Weld-On Brackets. Double check no dimensions have changed after tightening the nuts.

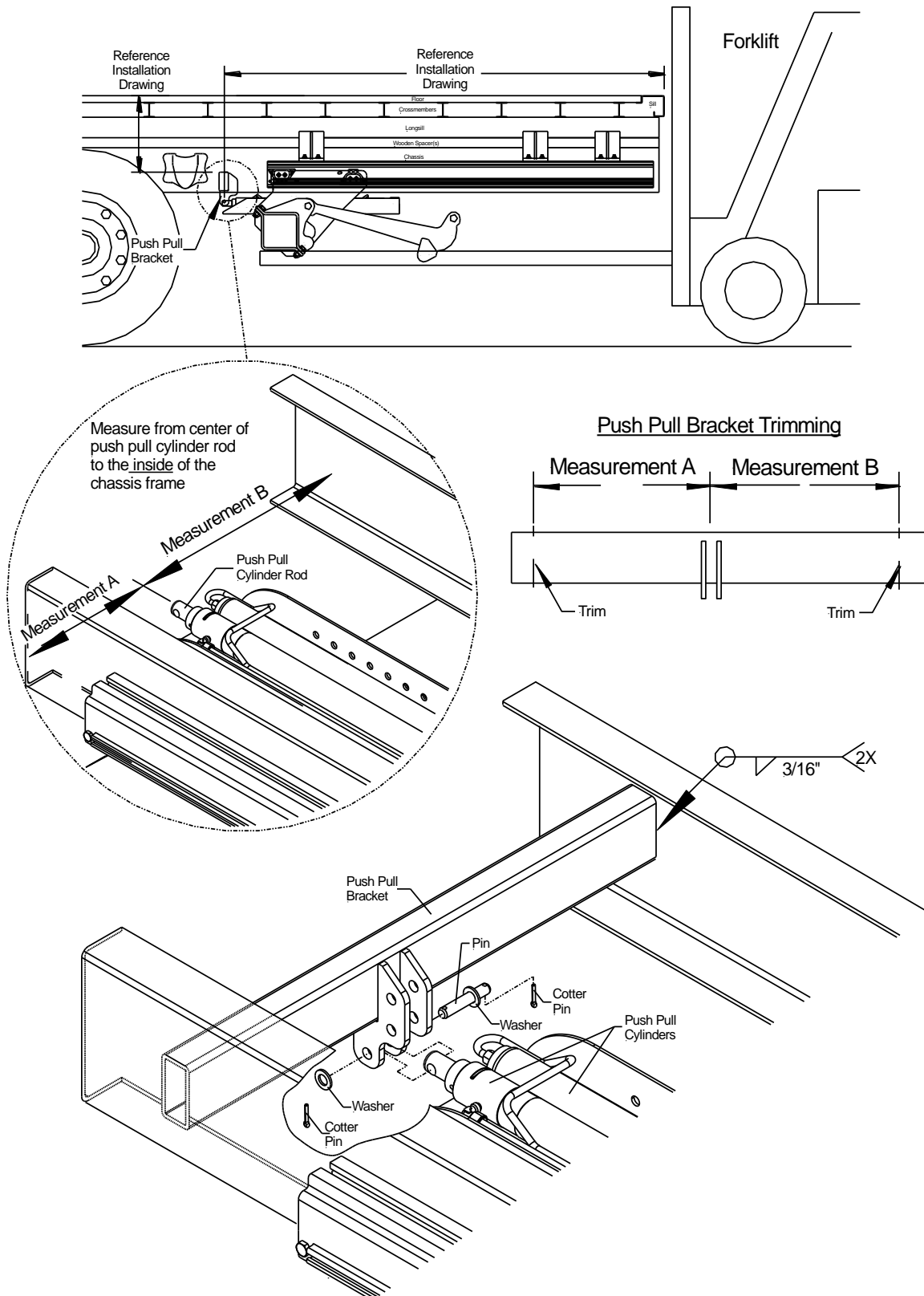


Rear View of Slide Rails and Vehicle

3. Prepare the liftgate mount frame to be inserted into the slide rails. Measure the mount plate distance making sure it matches the spacing of the slide rails at 40.50". Using a forklift, raise the liftgate assembly and align the liftgates mount plates with the slide rails and cautiously slide the entire liftgate forward to where the push pull cylinder hole is dimension indicates on the installation drawing.

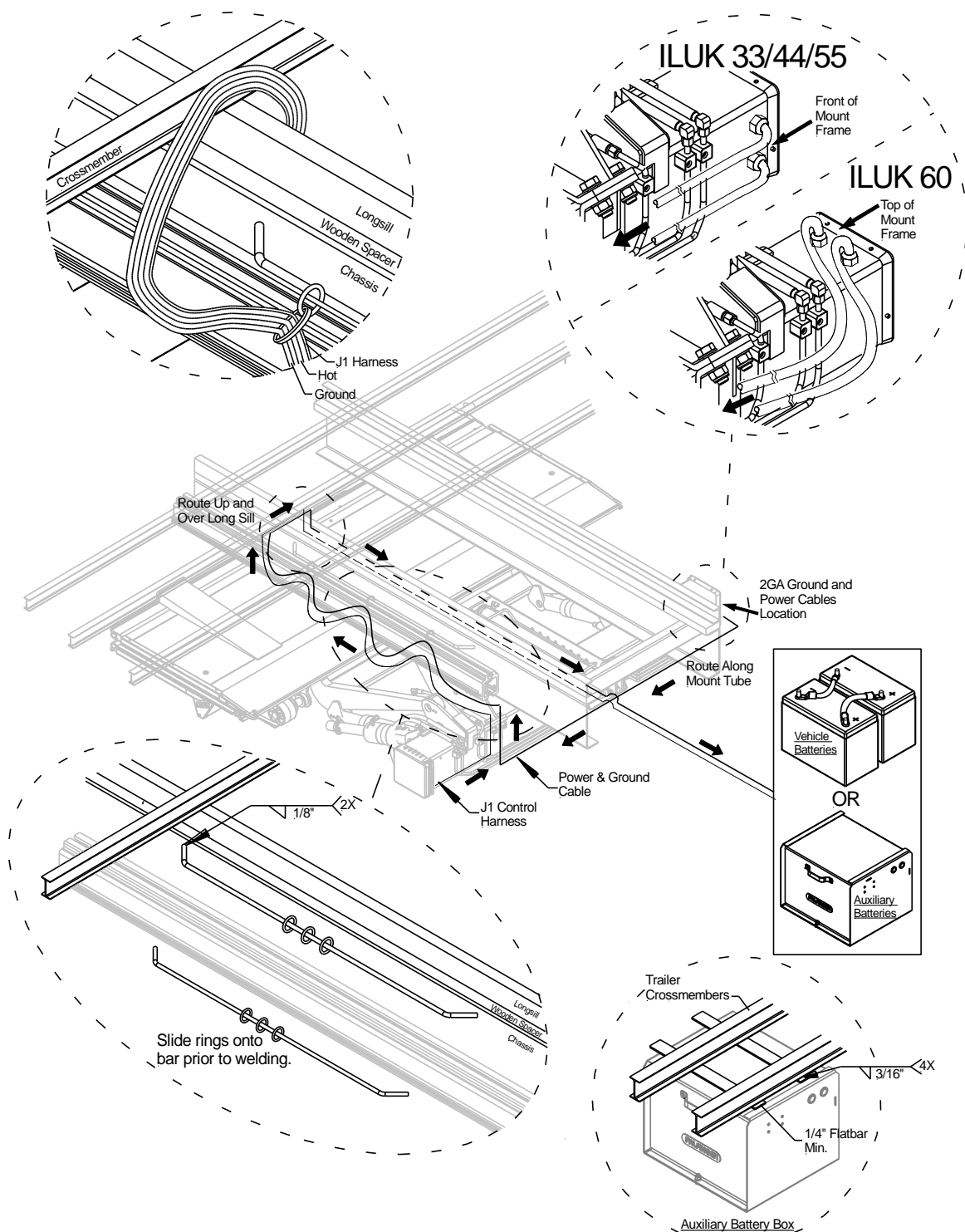


4. Remove the two cotter pins from the push pull cylinder. Trim and install the push pull bracket in between the vehicle chassis frame per the installation drawing dimensions. Install the push pull cylinder rod into the push pull cylinder bracket and secure with the pin and hardware.

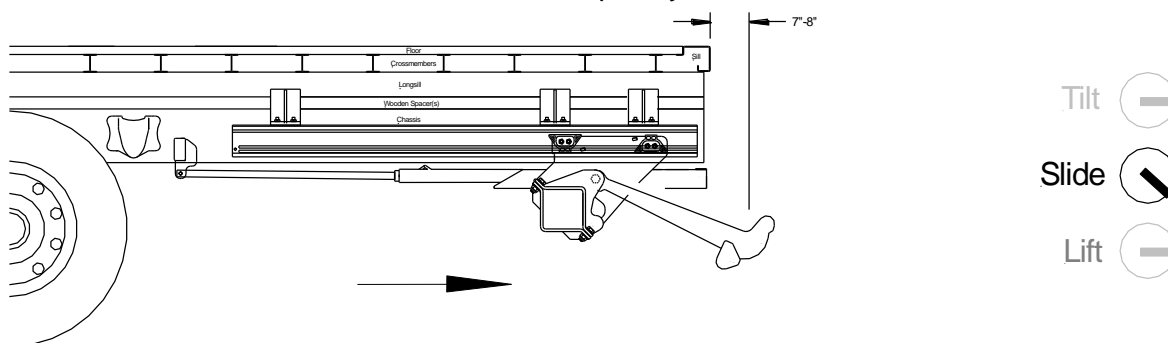


5. Adding Electrical Power to Liftgate: Route power, ground, and J1 cables as shown below. The ILUK liftgates have a ground and power cable located at the left (street) side of the mount frame. These power cables will power the pump and motor located inside the mount frame. The ILUK liftgates also have a PC Board that requires power. The PCB controls all the liftgates functions and features necessary to proceed with the installation. See Electrical Installation Section 15 on how to apply power.

Truck Installations might not have an auxiliary battery kit and the ground cable should be connected to the truck batteries. (Palfinger Liftgates **always** recommends an auxiliary battery kits.).

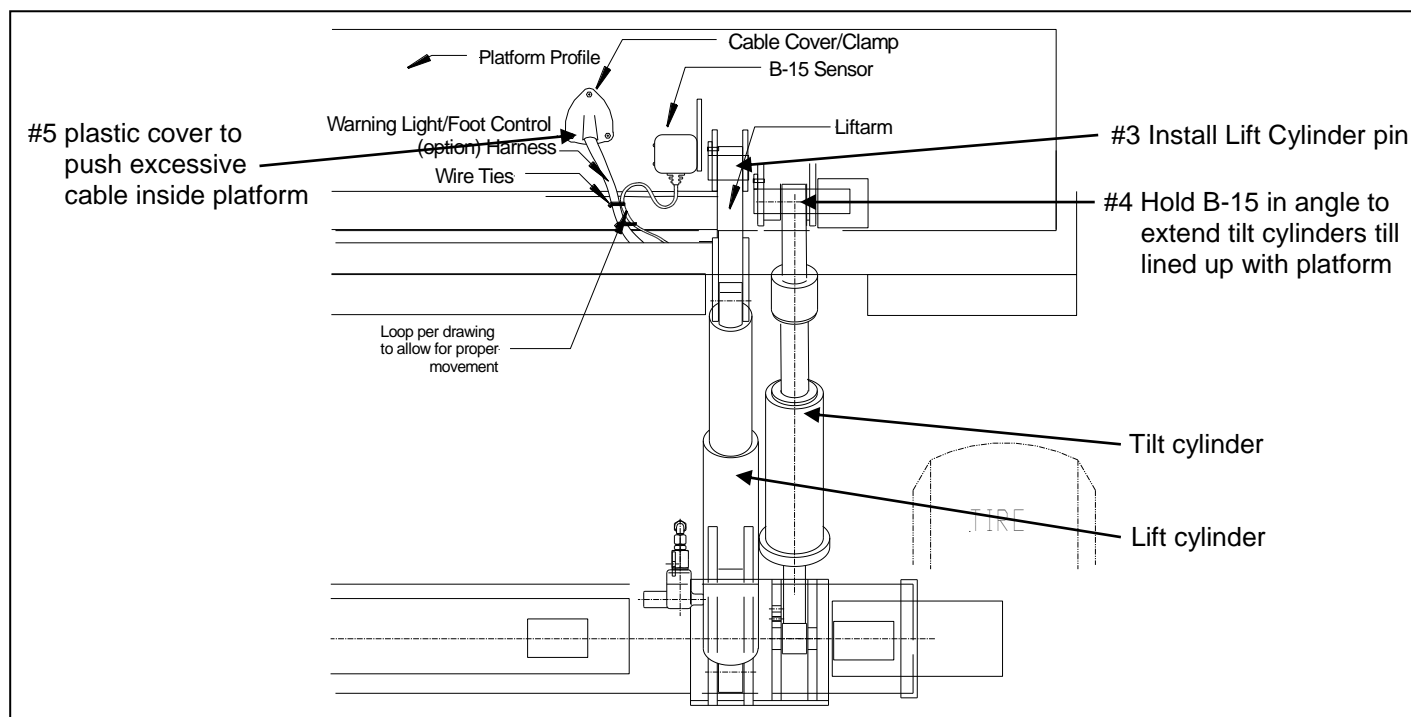


6. Remove the forklift. Use the Slide Out switch to slide the mount frame out towards the rear of the vehicle.
ATTENTION: Do not slide the mount frame completely out of the slide rails.

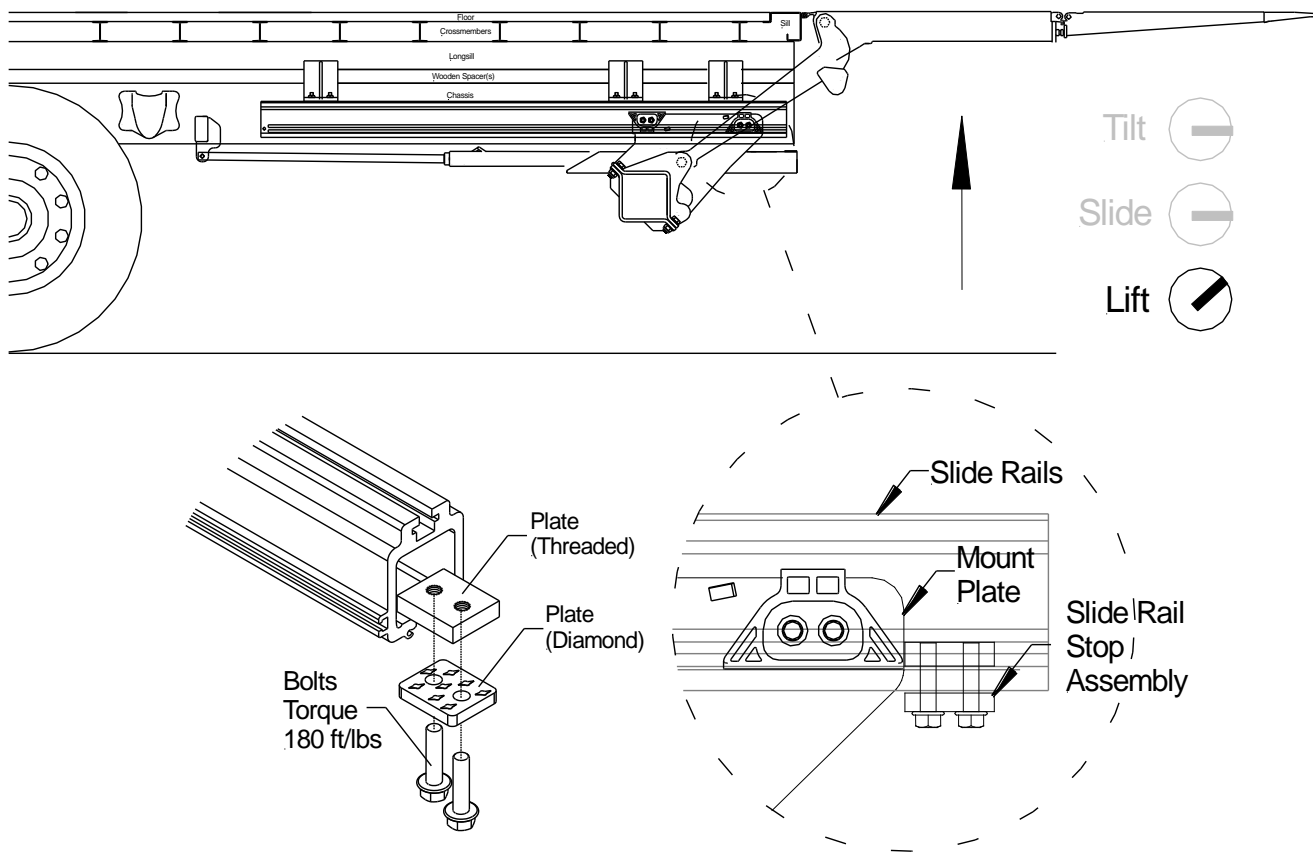


To install the platform (if not preinstalled by manufacturer) follow these steps:

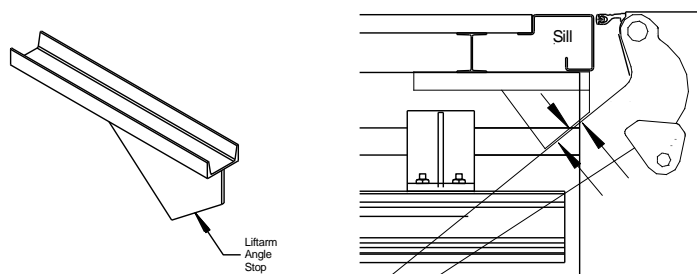
- 1) Unfold platform and clamp on to forklift or overhead crane.
- 2) Slide out gate to the point that you are able to attach platform clevis to lift arm and tilt cylinders.
- 3) Bring platform close to gate and attach lift arm to platform using provided pins.
- 4) To attach tilt cylinders hold B-15 platform sensor so that you are able to extend tilt cylinders when turning the tilt switch until you match pinholes on platform and tilt cylinder head. Wire retainer pointing towards front of truck/trailer.
- 5) If all **4 pins** (2 each side) are in place and **secured with lock bolts** install B-15 sensor to platform and connect foot control and warning light cables.
- 6) Push all excessive cable inside platform to protect connections from environmental influences.



7. Use the strap on the tip section to manually open. Use the Lift Up switch to raise the platform to bedheight. Leave a 3/16" gap between the sill and platform, this can be adjusted by using the Slide In and Out switch. Once platform is in place, install the rail stops in the orientation shown to prevent any misalignment of the platform. Torque rail stops bolts to 180 ft/lbs. Liftarms Upstops: Make sure the platform is aligned and flush with the floor/sill. Upstops must be installed to avoid damage to platform or sill.



Example of Fabricated Upstop for Liftarms

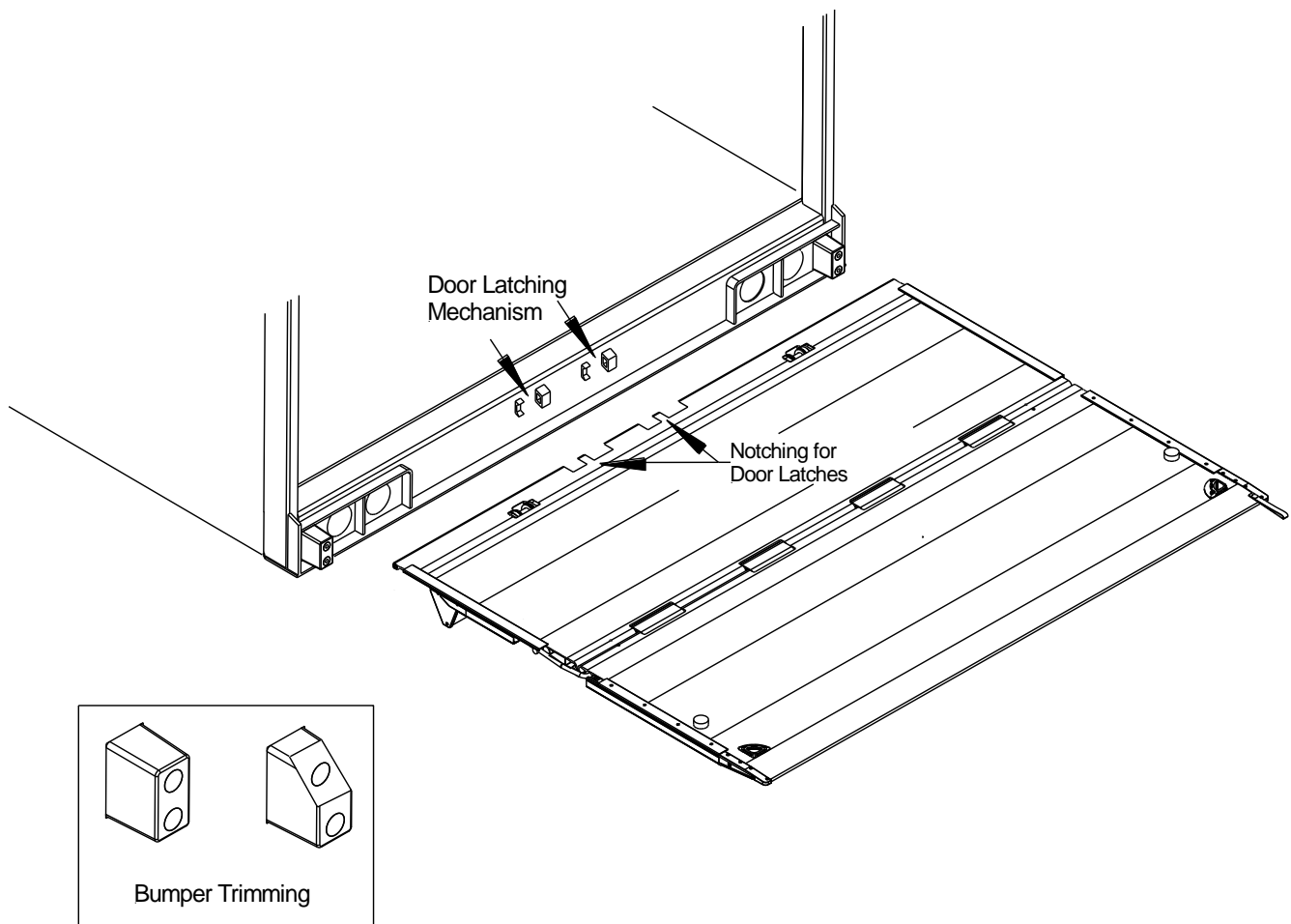


8. Basic truck installation is now complete. Proceed to Section 11.

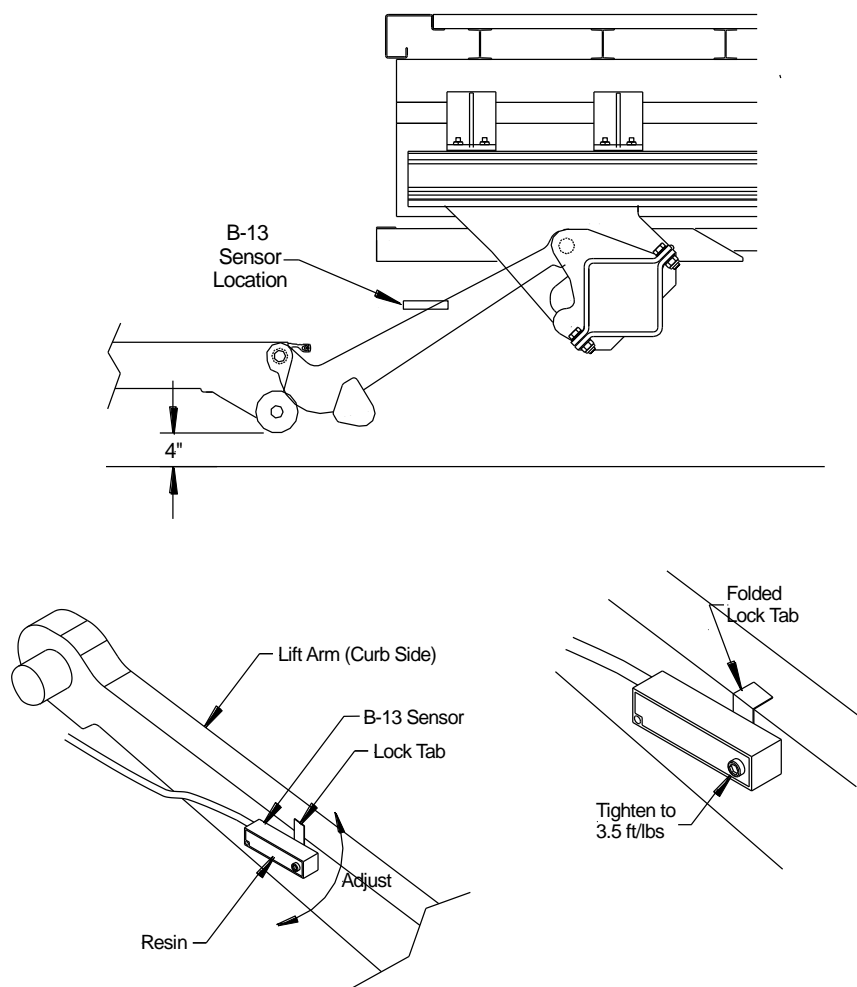
11 Platform Modification for Swing Door Vehicles

For installation on vehicles with rear swing doors, the platform will require to be notched in order to be able to raise the platform up to bedlevel. Due to the variation in vehicle designs, the notching will be required to be done by the installer.

NOTICE: Other components such as rear rubber bumpers could be an obstacle when raising the platform to bed level. It is best to relocate these bumpers where they do not interfere with the platform. If rear bumpers cannot be relocated, it is recommended to trim the rubber bumpers.



12 Setting B-13 Liftarm Sensor



To set the sensor correctly, lift unfolded platform up 4" from the bottom of roller wheel to ground.

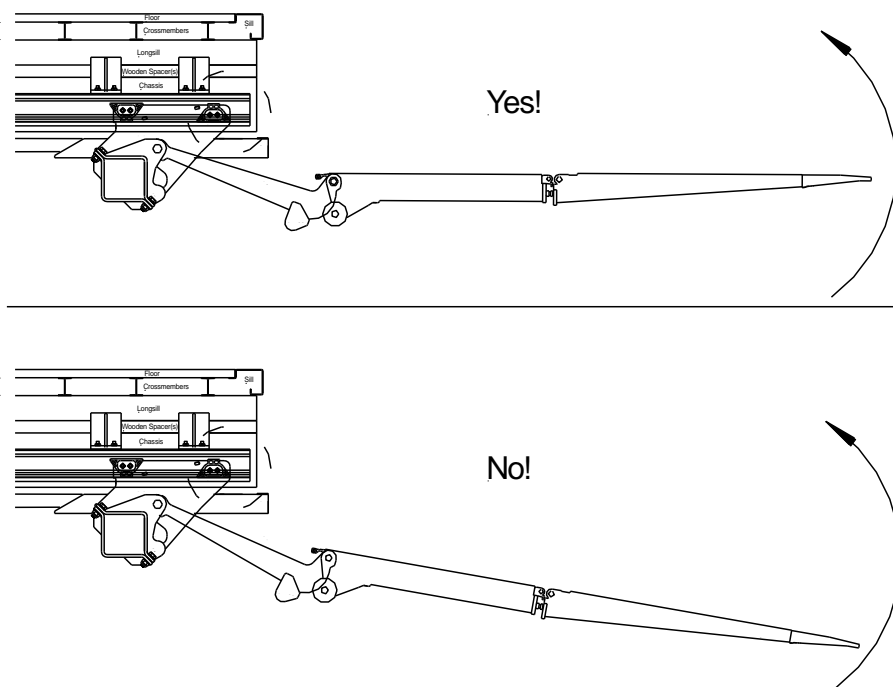
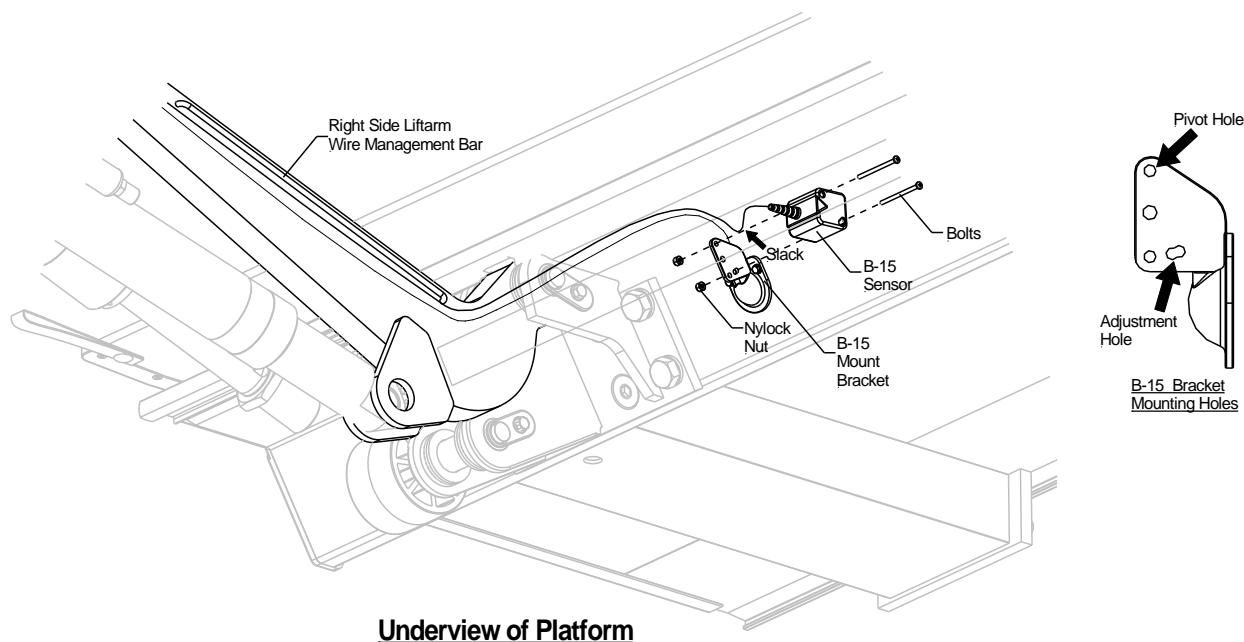
- Adjust the B-13 sensor in a way that it is level with the ground as shown.
- Raise gate all the way up after adjusting and lower to the ground. Platform tip will tilt towards ground if operator stays on the lower switch for about 3 seconds after nylon rollers touching ground.
- Cycle platform several times to check operation after tightening.
- Fold down Lock Tab tightly onto liftarm.

NOTICE

- At **NO** time the platform tip should tilt towards ground **while lowering**.
- Platform should **only tilt** after Nylon rollers contact ground and operator is on the down switch.
- After sensor is properly set, tighten lock bolt to 3.5 ft/lbs.
- Never over torque B-13 lock bolt. Sensor will break and malfunction.
- Verify epoxy, colored side of sensor is out (facing away from arm)
- Under torquing B-13 lock bolt may allow sensor to shift during normal gate operation.

13 Setting B-15 Platform Sensor

1. Mount the platform sensor B-15 to the right-hand side of the platform as shown. Make sure to loop wire around to give it enough slack in normal operation and route clear of any pinch points. Tighten the bolts to 3.5 ft/lbs. Do not use power tools.
2. Verify B-15 is set correct, when cable restrainer is parallel with platform surface.
3. **B-15 is working correct if platform finds preset level position while tilting up from ground position.**
4. If platform is only lifting, without leveling out - battery power supply is low, check and charge battery.
(On trucks – start truck and run in high idle for 5 – 10 Min).

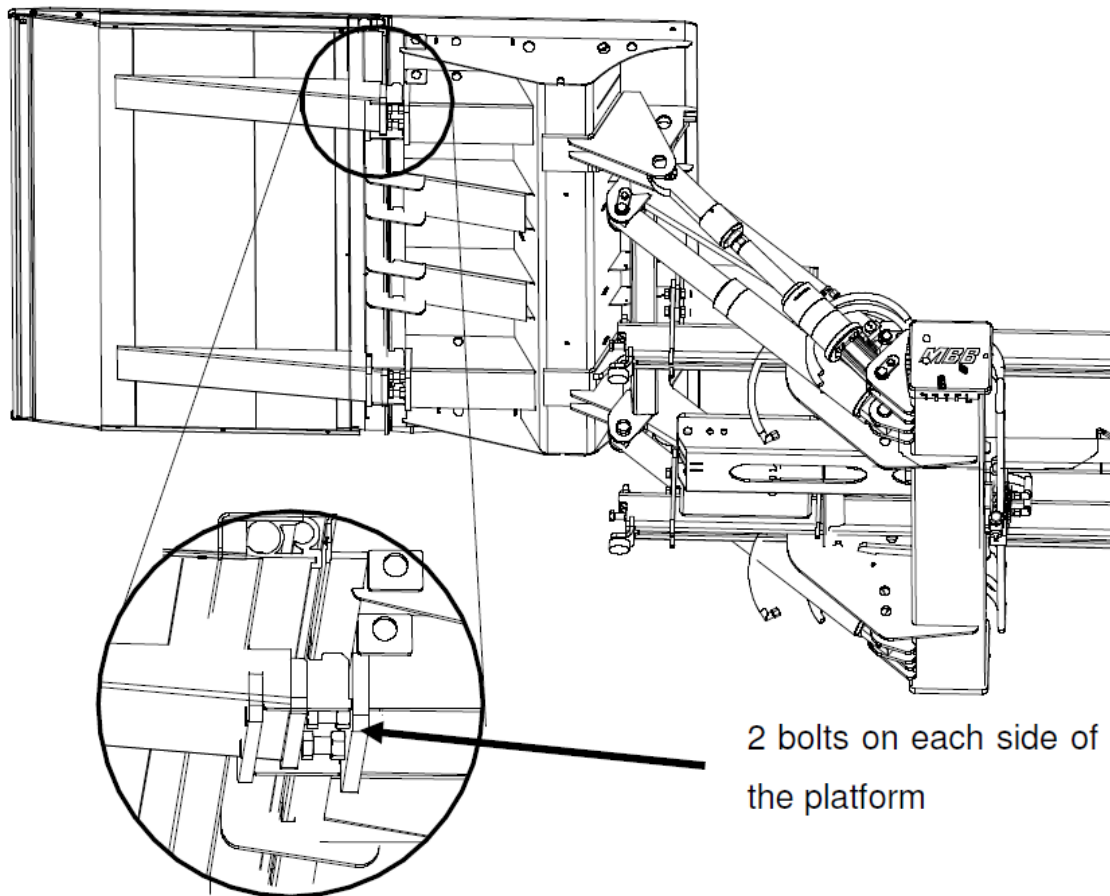


14 Platform Adjustment with Bolts

At the rear end of the main section there are 4 bolts for platform adjustment. These adjusting bolts are horizontal to the platform. To level the platform, the bolts need to be adjusted. To tilt the tip section up the bolts have to be rotated counter clockwise. To tilt the tip down the bolts have to be rotated clockwise.

To adjust the bolts the platform needs to be folded.

1. Adjust bolts to the right length for a level platform.
2. Tighten down the lock nuts to secure adjustable bolts.



15 Electrical Installation

When performing electrical installation, be certain to install and secure everything in a way where it is not subject to damage from moving parts, sharp edges, exhaust systems, etc.

⚠ WARNING

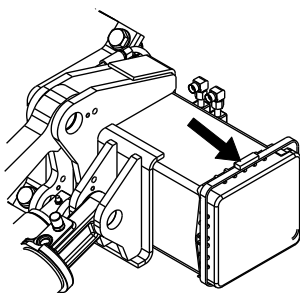
Any deviation from Palfinger Liftgates's recommended power setup **will void warranty and product liability** unless you have a written confirmation by Palfinger Liftgates that allows you to do specific changes.



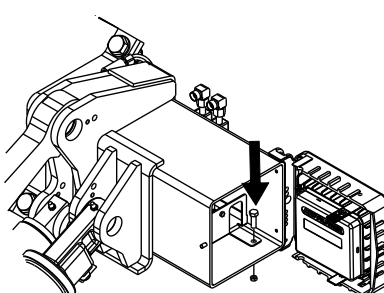
Inspect and test all electrical connections, wiring and the different functions to make sure that the electrical installation is complete.

NOTICE

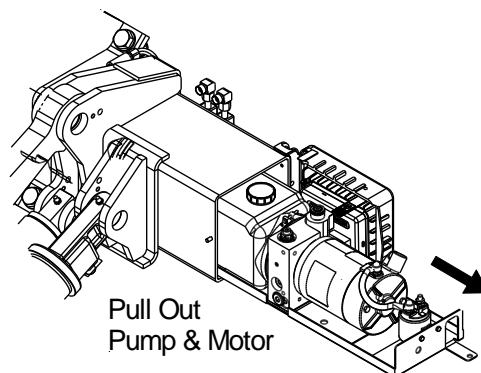
- Never secure a cable in a way where it can make contact with other wiring, brake, fuel, or air lines etc. or get pinched against other objects.
- Never tie power cables to gas or diesel lines as this is a fire hazard.
- Never exceed rating of existing fuses located at the battery, control board and/or the pump and motor which may result in serious damage to the equipment.
- Never jump the 150 Amp circuit breaker at the batteries unless otherwise instructed by the Palfinger Liftgates technical support group.
- Assure all connections are tight and securely sealed.
- Heat shrink all cable connection.
- 2 gauge cable, minimum, is required throughout the motor circuit.
- When working on the electrical installation, remove any jewelry, tools, or components that are conductive to prevent any damage or injuries.
- Insure that all wiring is secured and away from heat sources, sharp corners/edges, and abrasion from moving components during the operation of the liftgate and vehicle.
- If it necessary to access the pump and motor or the PCB during the installation process; One, remove the metal brace on the outside of the mount tube at the right side. Two, open the rubber cover. The PCB will be installed on the cover and to access the pump and motor remove the hardware that secure the pump and motor tray to the mount tube. Three, Pull the pump and motor out no more than 14".



Metal Brace



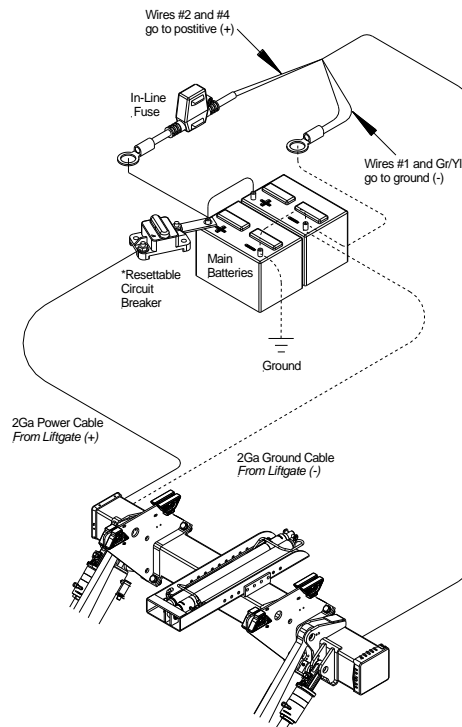
Remove
Hardware



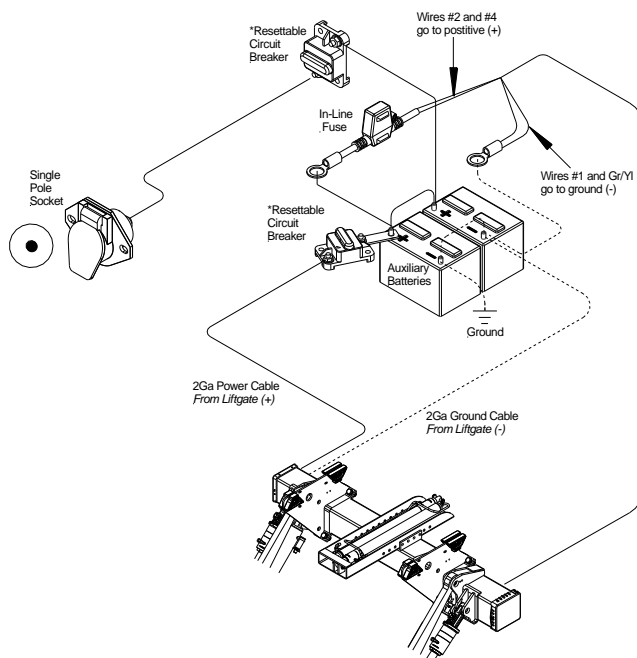
Pull Out
Pump & Motor

Pump and Motor Located Inside Mount Frame on the Right Side.

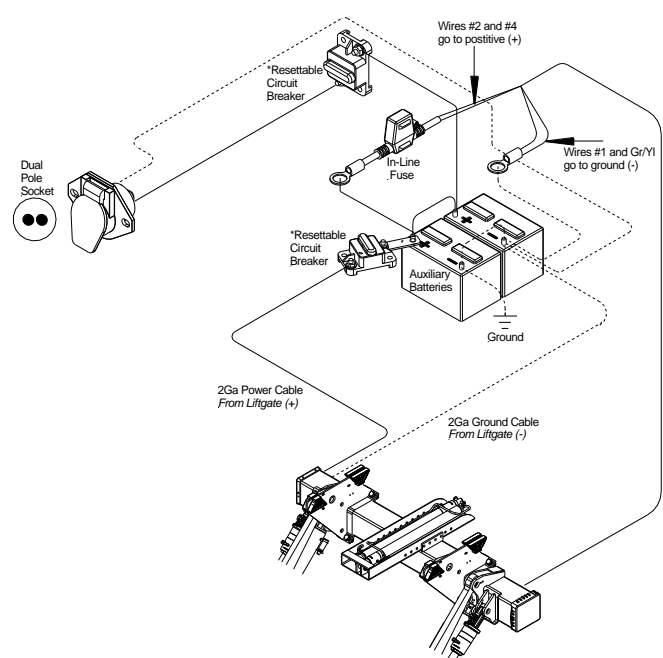
15.1 Electrical Wiring – Batteries – Truck/Trailer



Wiring Diagram – Truck



Wiring Diagram – Single Pole – Trailer



Wiring Diagram – Dual Pole – Trailer

*Resettable Circuit Breaker: 150 Amp Min. **Replace with same amperage breaker when necessary.**

Ground: For optimal grounding, ground all batteries and power units to the body side rails of the vehicle.

NOTICE: DO NOT attempt to jump in-line fuses with other objects other than the specified fuse.

Do not increase the amperage rating of fuse. Serious harm to the liftgate will result when standard practices are not followed.

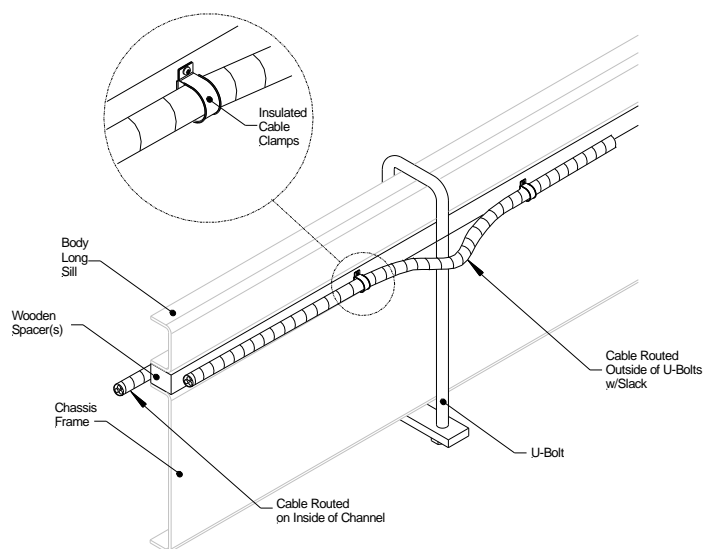
15.2 Cable Routing

1. The use of wire loom is highly recommended to protect and facilitate cable routing. Wire loom not supplied.
2. Route all cables along the wooden spacer and through the outside of the U-bolts or on the inside part of the channel.
3. Secure the wire along the wooded spacer with insulated cable clamps.



WARNING

Do not tie electrical cables along with hoses.



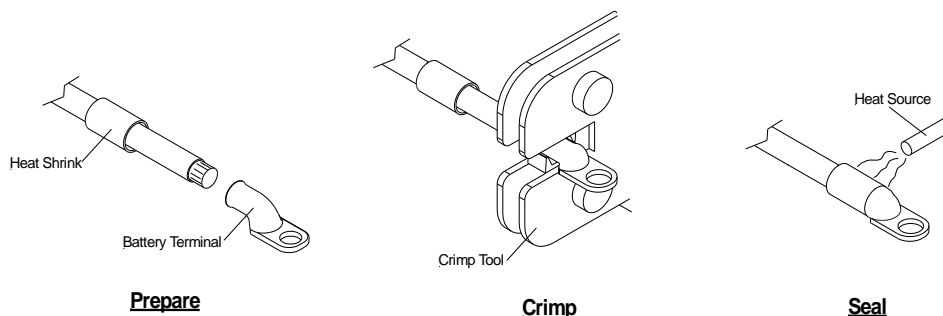
15.3 Wire Crimping



All grounding surfaces **MUST** be cleaned, prepped, and sealed per this manual. “Cut to size” cables **MUST** be properly crimped and sealed as factory supplied. All connections **MUST** be dressed with dielectric grease or equivalent sealer.

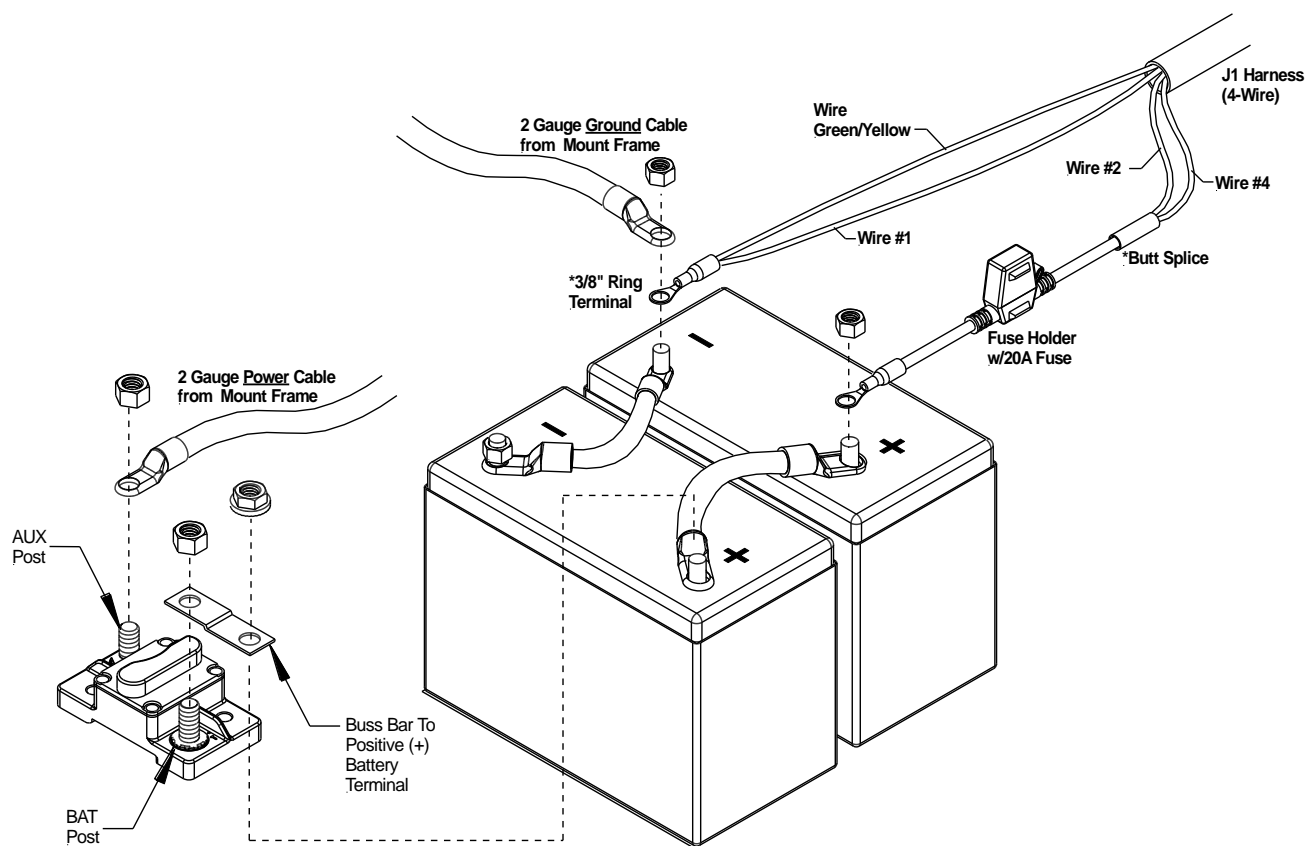
Battery Cable Crimping

1. Prepare the wire to be crimped. Straighten out the exposed copper wire and insert into the battery terminal.
2. Use a crimping tool designed for crimping battery terminals for best results. The use of other tools could possibly damage the battery terminal and make poor connections between the wire and terminals.
3. Slide the provided heat shrink over the battery terminal and cable to seal the connection.



15.4 Circuit Breaker & Control Board Harness Installation

1. Attach the bus bar to the circuit breaker on the BAT post. Mount the circuit breaker securely on the positive terminal post of battery.
2. Connect the liftgates 2 gauge power cable to the AUX post on the circuit breaker. Connect the liftgates 2 gauge ground cable to the negative (+) post on battery.
3. Crimp the ring terminal wire to Wire 1 and Wire Green/Yellow and install to negative (-) terminal on battery. Crimp Wire 2 and Wire 4 to the fuse holder and install on positive (+) terminal of battery.

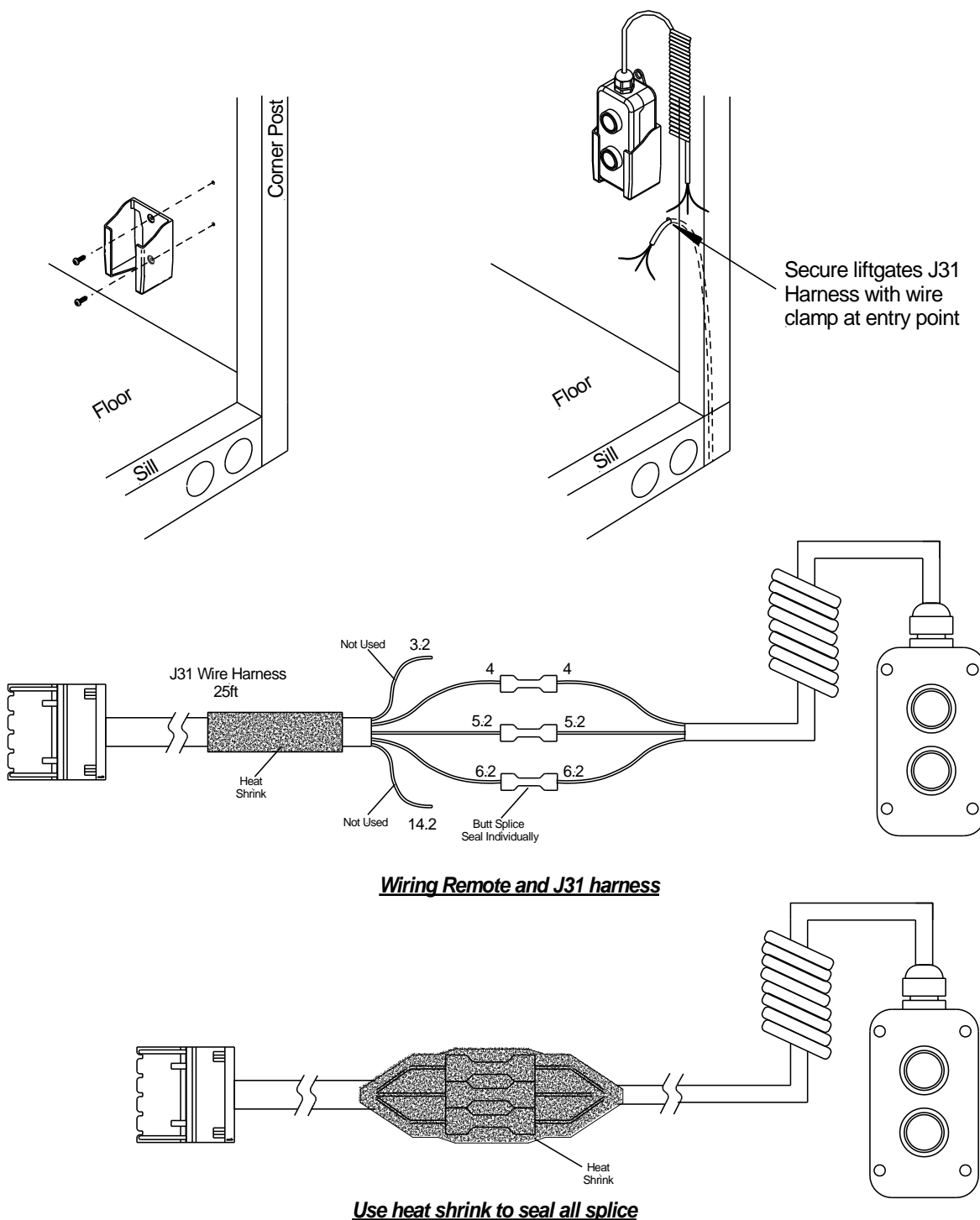


Battery Mount or Battery Box Mount

*Items require crimping

15.5 2-Button Hand Held Remote Control (Standard)

1. Mount the holster approximately 40"- 48" from the floor, or determine the best location as preferred by end user.
2. Route the cable from the liftgate up through the inside corner post or between the wall extrusions of the truck. Use the wire clamp to secure the incoming cable
3. Splice the cables from the liftgate to the hand held remote with butt connectors and seal each connection with heat shrink.



15.6 Toggle Switch Installation (Optional)



The Toggle Switch is weatherproof from factory, do no substitute or tamper with the switch.

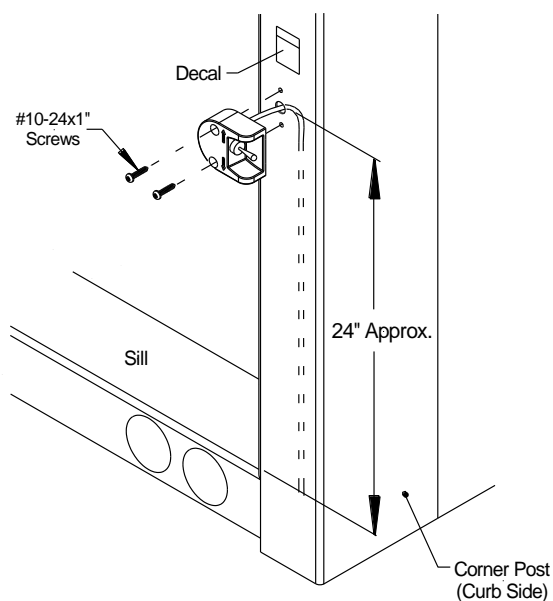
NOTICE

Determine location for fixed toggle switch on corner post in a way that the operator can view the platform and surrounding areas while operating the liftgate. Place toggle switch in a horizontal position. Always be aware of other wiring located inside the corners posts when drilling.

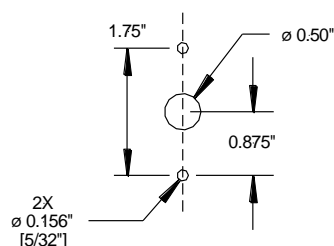
Steps:

1. Mounting Hole Pattern: Locate area on rear curb side post of body where switch can be reached by the operator from the ground. Position the holes approximately 24" up from vehicles floor. Drill two 5/32" (.156") holes spaced at 1-3/4" vertically. Drill another hole centered to the two 5/32" holes of 1/2" for the wiring harness.
2. Operation: Verify all operations are functional as intended. Secure the switch to the corner post with the two #10-24 x 1" self-tapping screws. Add the Up/Down decal.

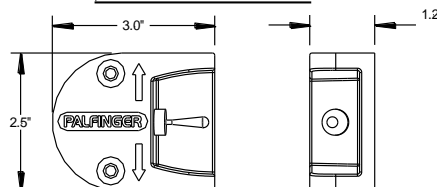
IMPORTANT: Screws must be hand tighten, do not use power tools to tighten screws.



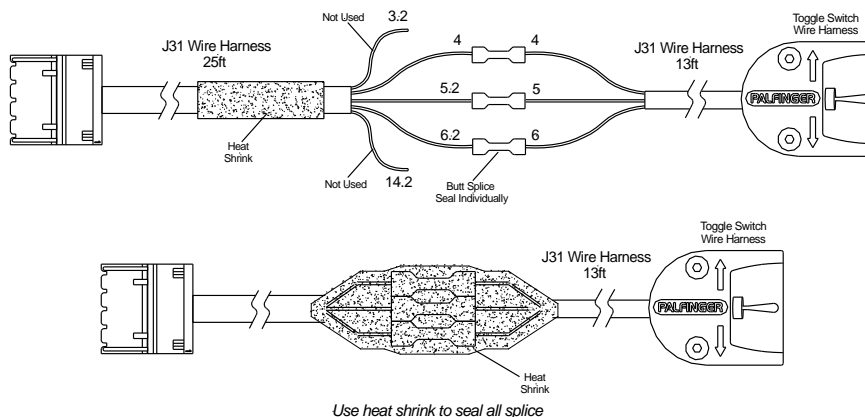
Mounting Hole Pattern



Switch Dimensions

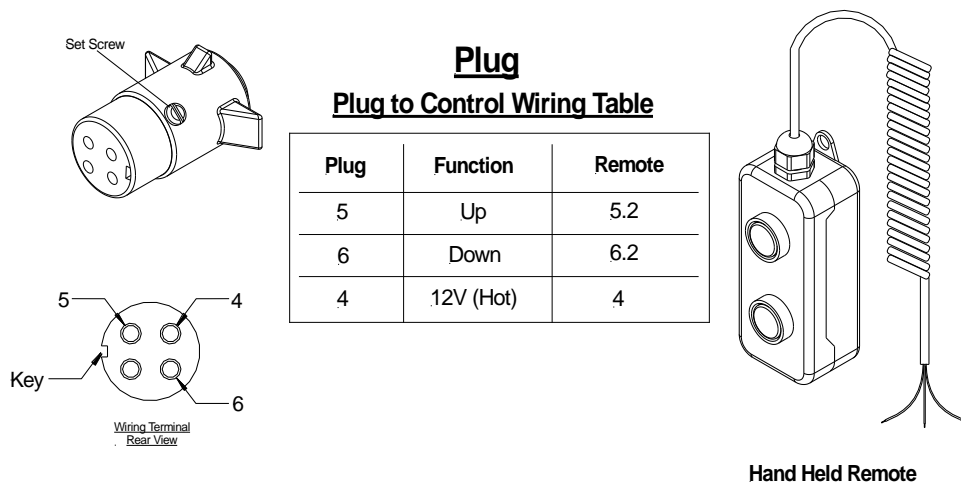


Switch Wiring

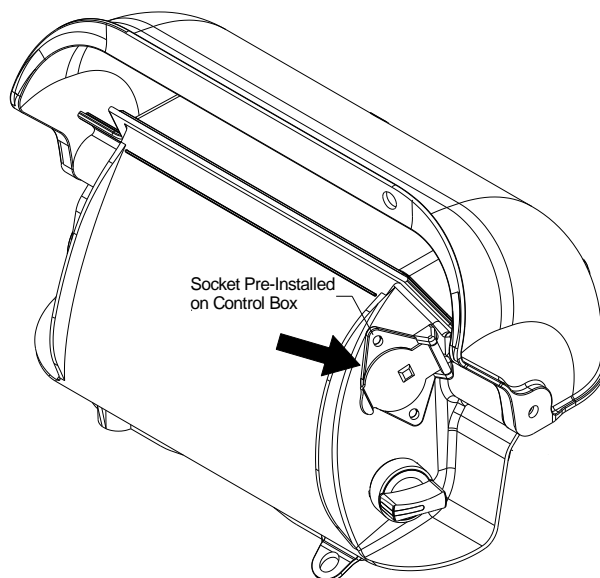


15.6.1 Plug and Socket (Optional)

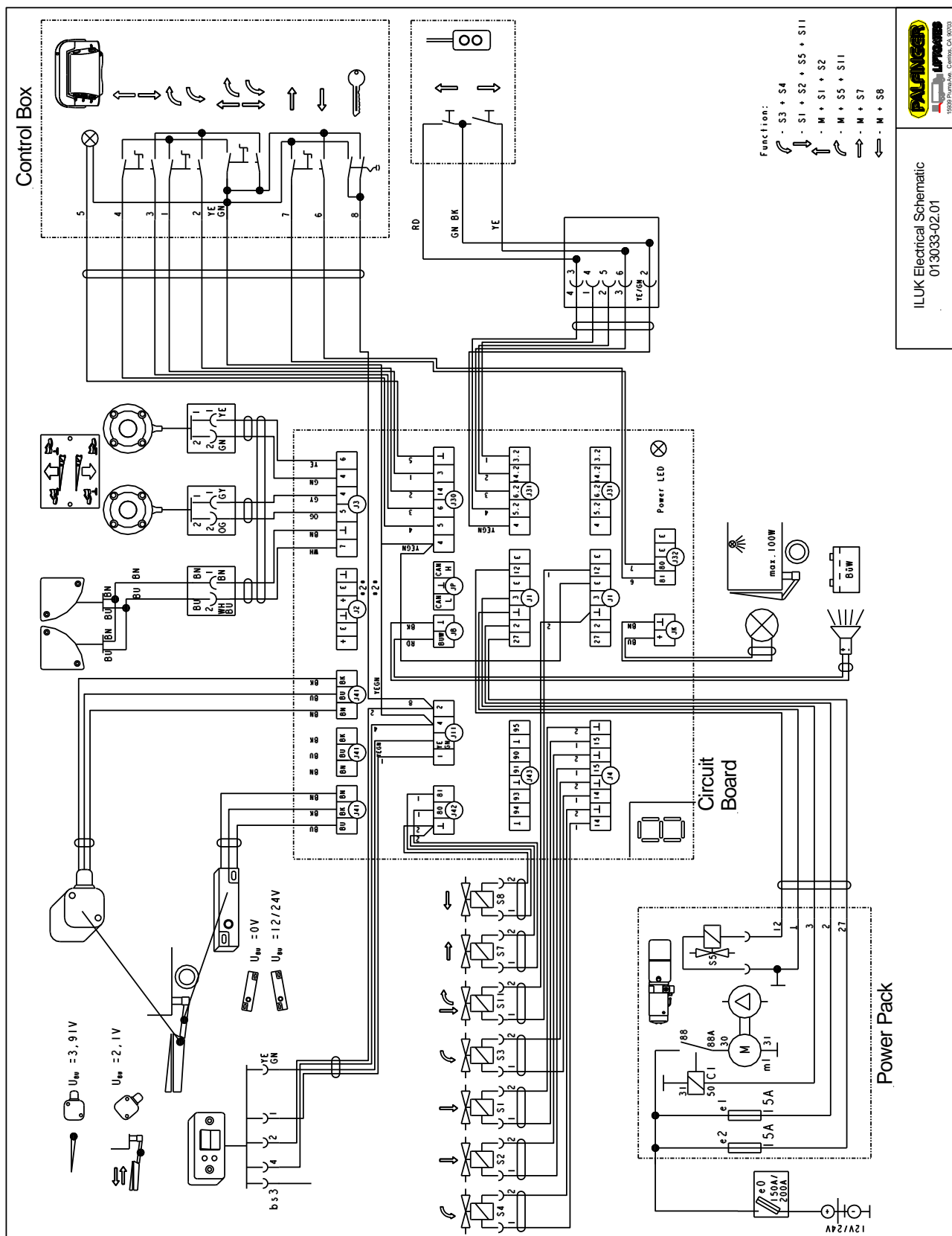
Remove the set screw to access the wire terminals on the plug. Wire the remote to the plug per the wiring table.



The socket for the plug will be pre-installed from the factory on the control box in the location shown below. No installation is required for the socket.

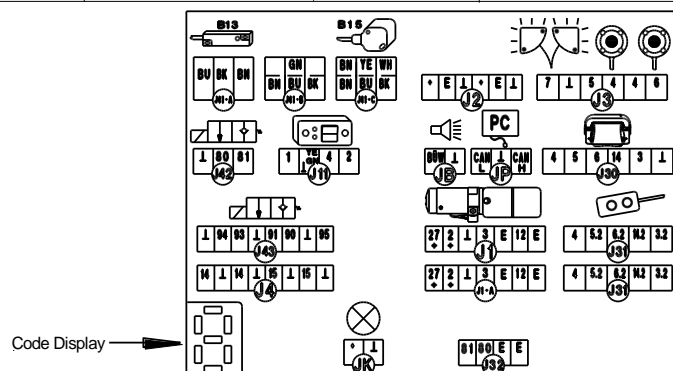


15.7 Electrical Schematic

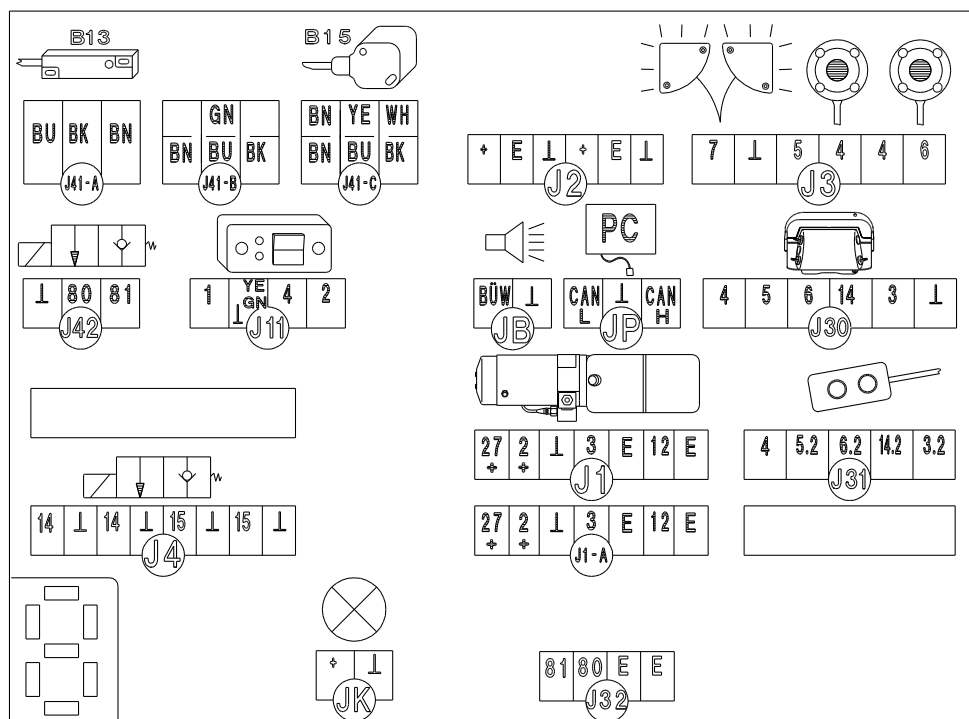


16

Code:	Description:	Reason:	Solution 1:	Solution 2:	Solution 3:	Solution 4:
0	System OK / Control System: OFF	System OK / Control System: OFF	System OK / Control System: OFF	--	--	--
1	System OK / Control System: ON	System OK / Control System: ON	System OK / Control System: ON	--	--	--
2	Low Voltage	Voltage J1 Pin 2 too low	Check J-1 & J-2 power cable at PC board and battery for tight connection, oxidation and damage.	Check the battery condition / battery charged	Motor could have worn carbon brushes / motor could be bad	--
3	Liftarm sensor (B-13): Broken wire, short	J41-C shorted; J41 pin BLUE: wire getting more than 5 Volts (right upper location J41)	Check adjustment B-13	Check sensor for signal Blue wire with platform 10"-12" off ground	Change B-13 liftarm sensor	--
5	Platform sensor (B-15): Broken wire, short	J41-C shorted; J41 pin BLUE: wire getting more than 5 Volts (right upper location J41)	Check adjustment B-15 platform	Unplugged, plugged in wrong location	Change B-15 platform sensor	To temporary by-pass, jump Black to Blue
6	Short on warning lights	Power consumption J3 Pin 7 to high	Check J-1 & J-2 power cable at PC board and battery for tight connection, oxidation and damage.	Check warning light cables for damage	--	--
7	Short in cab Switch, control system	Power consumption J11 Pin 1 to high	Check J-1 & J-2 power cable at PC board and battery for tight connection, oxidation and damage.	Check cab cut off/ warning light cable for damage	--	--
8	General Short in electric wiring	General power consumption to high	Check J-1 & J-2 power cable at PC board and battery for tight connection, oxidation and damage.	Unplug wires one by one, check for correct plug location	Repair cables, connections, check for burnt or crushed wires	--
9	Defect in motor solenoid during lifting	Power consumption J1 Pin 3 to high	Check J-1 & J-2 power cable at PC board and battery for tight connection, oxidation and damage.	Check the battery condition / battery charged	Possible short in diode jumper wire on Motor Solenoid: Remove Jumper	Possible short in Thermo Switch inside motor Bypass and test, replace Thermo Switch
A	Fuse 15A damaged on power pack (J1, Pin 2)	Defective fuse J1 Pin 2	Check fuses at power pack	Check fuse holder Replace fuse with same amp fuse	--	--
b	During opening, an error was recognized on the valve spool for opening (S3/S4) or at the motor solenoid. NOTE: ONLY APPLIES TO ILK CANTILEVER LIFTGATE.	Power consumption J1 Pin 3 to high; ohm reading J4 pins 14 have changed	Check J-1 & J-2 power cable at PC board and battery for tight connection, oxidation and damage.	Check the battery condition / battery charged	Check ohm reading of the coils	Change coils or cables
c	During closing, an error was recognized on the motor solenoid or on the valve spool S-5. NOTE : ONLY APPLIES TO ILK CANTILEVER LIFT GATE.	Power consumption J1 pin 3 too high; ohm reading J1 pin 12 has changed	Check J-1 & J-2 power cable at PC board and battery for tight connection, oxidation and damage.	Check the battery condition / battery charged	Check ohm reading of the coil motor solenoid	Change coils or cables
d	During lowering, an error was recognized on S-1/S-2 lowering valves or valve spool S-5	Resistance J1 pin 12 has changed; ohm reading J4 pins 15 have changed	Check resistance of the coils	Change valve coils and cables	Check ohn reading of the coils	Change coils or cables
E	Emergency mode active (all logic fuctions and comfort fuctions are switched off)	Activate by pressing OPEN and LOWERING button (and Second Hand if in use) simultaneously for over 10s	Deactivate by turning cab switch or on off switch OFF then back ON	--	--	--
P	Error diagonstic mode active	Attached service plug	--	--	--	--
	NOTE: ILK, B-15 Sensor wire points toward ground when platform stored vertical	NOTE: B-13 sensor wire points toward front of vehicle			To Clear Code: 1. Unplug J-11 and plug back in	
	NOTE: ILF, ILU, ILUK b-15 sensor wire points toward front of vehicle when platform is up at bed level	NOTE: Purple side of sensors always face outward, where you can see purple			2. Cab switch off and on to clear code	

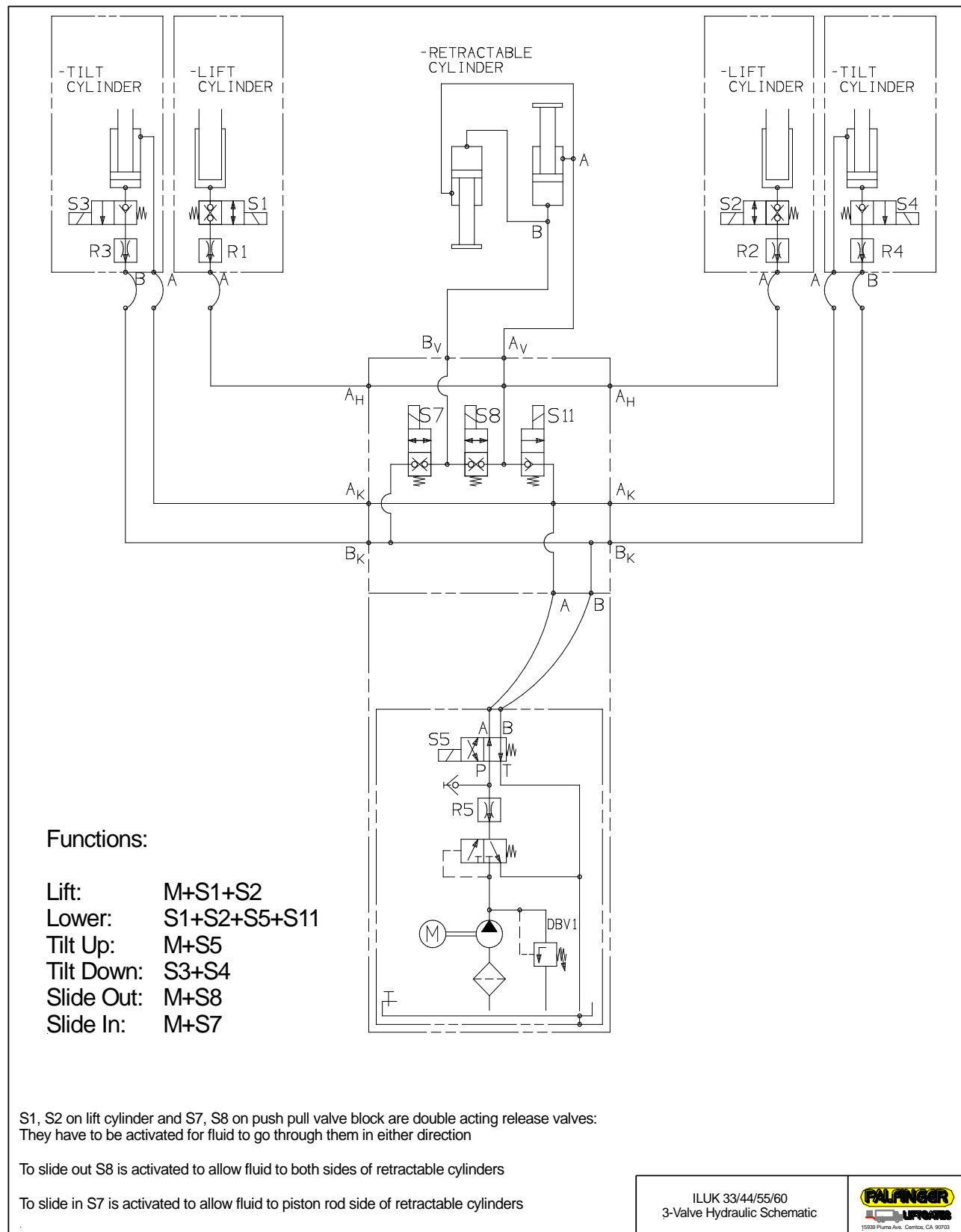


17 Connector Overview on PC Board



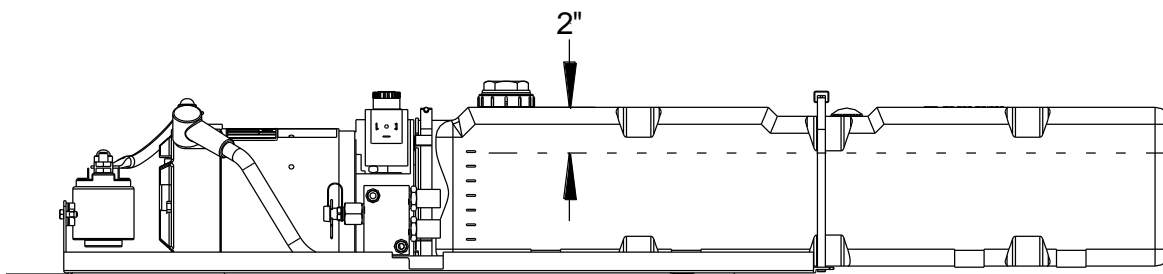
<u>Port Number</u>	<u>Port Designation</u>
J1	Power Pack
J1-A	Valve
J2	Not Used
J3	Warning Lights & Foot Controls on Platform
J4	Valves
J11	On/Off Switch
J30	Control Box
J31	Hand Held Remote
J32	Not Used
J41-A	B-13 Sensor
J41-B	Not Used
J41-C	B-15 Sensor
J42	Valves
JB	Not Used
JK	Not Used
JP	PC Diagnosis

18 Hydraulic Schematic



18.1 Hydraulic Fluid

From the manufacturer, the ILUK liftgates include Shell Tellus 15 hydraulic fluid. The hydraulic reservoir will be filled to maximum level by the manufacture (2" from the top of the reservoir).



When changing or adding fluids, it is highly recommended to use alternatives fluid brands and types listed below:

Alternative Fluids	
Temperature Range	Fluid Brand
30° to 150° F	EXXON UNIVIS J26
	MOBIL DTE 13M
	CHEVRON AW MV32
	ROSEMEAD MV 150 (32)
-50° to 150° F	PETRO CANADA HYDREX MV ARCTIC 15
	MOBILE DTE 11
	SHELL AERO FLUID 4/41
	SHELL TELLUS 15
Extreme Cold Temperature	MIL H5606 (Military Spec.)

19 Decal Placement and Inspection



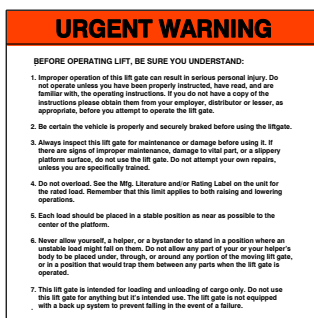
For operator's safety, all decals appearing in "Decal Kit" must be placed visibly on the control side of liftgate to be read by operator. This is typically a combination of decals on the liftgate and truck/trailer body. Make sure to place the maximum capacity decal (D) on driver and curb side of the vehicle.

Important: Never remove or paint over any decal. If any decals require replacement contact Palfinger Liftgates.

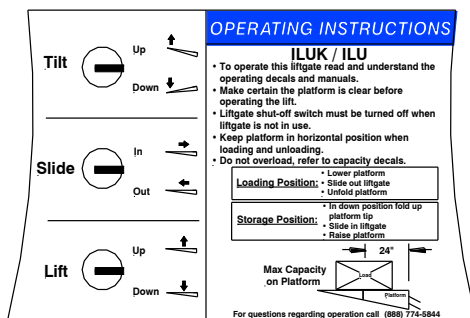
Decal Kit			
Decal	Qty.	Part No.	Description
A	1	ATG-URGWA	Urgent Warning: Elevating gate instructions
B	1	ATG-ILUK	Operating Instructions
C	1	ATG-BKR	Circuit Breaker Reset (must be located at the circuit breaker)
D	2	ATG-XXXX	Capacity (check the serial number plate to find out the gates specific capacity).
E	1	ATG-RESET	Circuit Breaker Protection
F	2	ATG-WLH	Warning: liftgate can crush
G	2	ATG-PLAT	Warning: Always stand clear of platform area
H	1	ATG-CAB	Liftgate Shut-Off (Place Decal next to the On-Off Switch in the Cab)
I	1	ATG-WNG	Warning: Use handle to open (must be located underneath handle (main section))
J	1	ATG-FC	Foot Controls (Optional)
K	1	2032626	Palfinger Logo (Trailer Only)

NOTICE

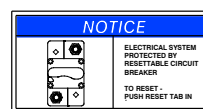
It is the installer's responsibility to determine that the vehicle meets DOT and federal lighting regulations. Keep in mind that there are different requirements depending on the classification of the vehicle. This document is not intended to replace published agency regulations, and it is strongly recommended that the installer references the Code of Federal Regulations (CFR) which can be viewed at <http://www.ecfr.gov>



Decal - A



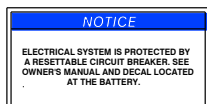
Decal - B



Decal - C



Decal - D



Decal - E



Decal - F



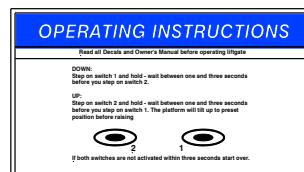
Decal - G



Decal - H



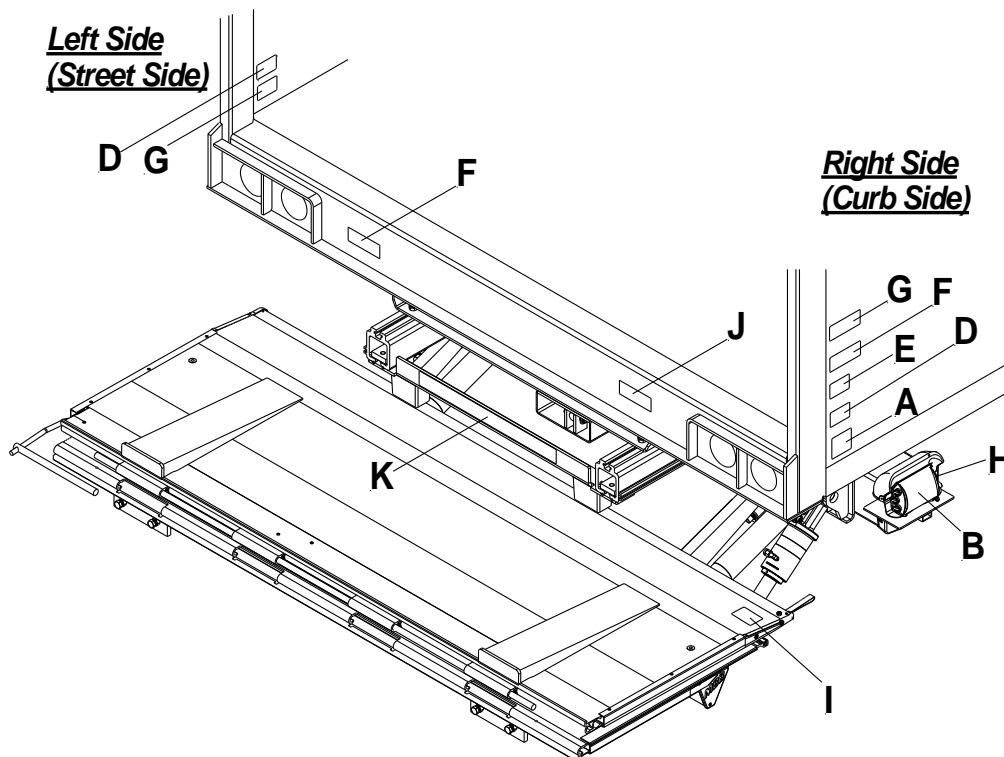
Decal - I



Decal - J

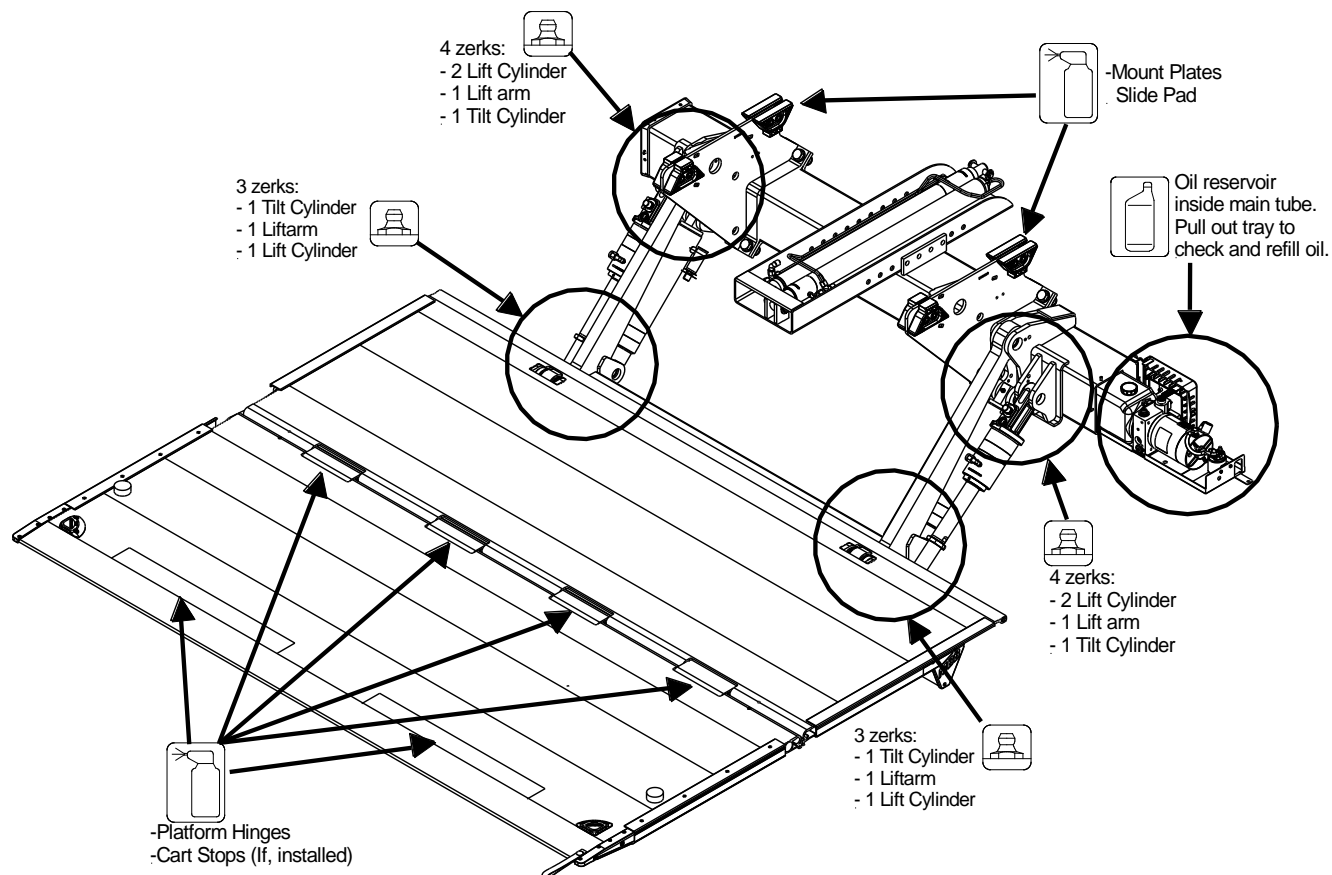


Decal - K



20 Lubrication

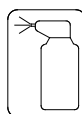
1. Lower the platform to the ground.
2. Remove red protector caps from each component. Lubricate, grease, and oil per diagram below.
3. Cycle platform up and down several times. Lubricate and grease all points again.
4. Wipe any excess grease and replace all red protector caps on zerk.



Grease: Location of Grease Zerks (7 on each side, 14 total).



Hydraulic Oil: Oil level in the power pack tank (see marking inside of power pack reservoir).



Penetrating Oil: Platform hinges, Slide Rails and optional Cart Stops.

21 Technical Data

21.1 Torque Specifications

Imperial Fasteners

Fastener Size	Grade 2 Torque (ft-lbs)		Grade 5 Torque (ft-lbs)		Grade 8 Torque (ft-lbs)	
	Coarse	Fine	Coarse	Fine	Coarse	Fine
1/4"	4	4.7	6.3	7.3	9	10
5/16"	8	9	13	14	18	20
3/8"	15	17	23	26	33	37
7/16"	24	27	37	41	52	58
1/2"	37	41	57	64	80	90
9/16"	53	59	82	91	115	129
5/8"	73	83	112	128	159	180
3/4"	125	138	200	223	282	315
7/8"	129	144	322	355	454	501
1"	188	210	483	541	682	764

Metric Fasteners

Fastener Size	Class 8.8 Torque (Nm)		Class 10.9 Torque (Nm)		Class 12.9 Torque (Nm)	
	Coarse	Fine	Coarse	Fine	Coarse	Fine
M5	5.75	-	8.1	-	9.7	-
M6	9.9	-	14	-	16.5	-
M7	16.5	-	23	-	27	-
M8	24	-	34	-	40	-
M8x1	-	25	-	35	-	42
M10	48	-	67	-	81	-
M10x1.25	-	49	-	68	-	82
M12	83	-	117	-	140	-
M12x1.25	-	88	-	125	-	150
M14	132	-	185	-	220	-
M14x1.5	-	140	-	195	-	235
M16	200	-	285	-	340	-
M16 x1.5	-	210	-	295	-	350
M18	275	-	390	-	470	-
M18 x1.5	-	305	-	425	-	510
M20	390	-	550	-	660	-
M20x1.5	-	425	-	600	-	720
M22	530	-	745	-	890	-
M22 x1.5	-	570	-	800	-	960
M24	675	-	960	-	1140	-
M24x2	-	720	-	1000	-	1200

22 Final Inspection Check List



Liftgate failure or malfunction could result in property damage, personal injury or death if you fail to check each of the following items listed. **DO NOT USE** the liftgate if any of the following points are NOT verified and checked.

Installation is **NOT** complete and all **WARRANTIES** are **VOID** if you have not checked and verified all items listed on this inspection sheet. Inspection sheet is to be filled out at the facility where liftgate was installed and **MUST** be sent to Palfinger Liftgates for warranty activation.

Structural Inspection

- ☐ All welds are 100% complete per this manual.
- ☐ All nuts, bolts, mounting hardware, pins, chain anchors are tight.
- ☐ All mounting dimensions are correct and liftgate is square and parallel per the installation drawing and manual.

Hydraulic Inspection

- ☐ Pump reservoir is filled to 2" from top of reservoir when cylinders are completely compressed (platform is Stored position).
- ☐ Hydraulic components and connections do not leak.
(Should be checked after unit is hydraulically locked for five (5) minutes.)
- ☐ All hydraulic lines are secured with cable ties, hoses clamps, or other fasteners. No hoses or components rub on the frame, platform, or any other components while unit is in operation or in storage. No hoses are kinked or bent.

Electrical Inspection

- ☐ Battery cable(s) attached and clamped tight and dielectric grease is used to seal all connections.
- ☐ All electrical lines are secured with cable ties, hoses clamps, or other fasteners and are properly protected and away from sharp edges and moving parts.
- ☐ Circuit Breakers installed and wired per instructions.
- ☐ Measure battery voltages: Flooded Batteries = 12.6V; AGM Batteries = 12.8V
- ☐ Lights wired properly and operate per DOT, State, and Federal requirements.

Operational Inspection

- ☐ All decals are in place and legible per instructions.
- ☐ All pivot points are lubricated per instructions, and serk fittings have been capped.
- ☐ Upstops have been fabricated and installed for the liftarms.
- ☐ Sill notches have been reinforced.
- ☐ Rubber upstop pads are adjusted tight against platform.
- ☐ Platform travels up and down smoothly and freely, without any hesitation, interference, or unusual noises.
- ☐ B-15 sensor is operating as intended and not letting the platform lift tilted.
- ☐ Platform raises parallel to the floor. Adjustable bolts have been adjusted and lock nuts are tight.
- ☐ Platform rests on the ground evenly when lowered completely.
- ☐ Platform raises and lowers properly and at correct speed. (2 to 4 inches per second)
- ☐ Gate is painted, body is clean around gate. Chrome cylinder shafts are not painted. Rubber & plastic caps are in place.
- ☐ The liftgate serial number and model number are documented on the inside of the front cover of the Owners Manual (pg. 4), as well as the installation manual in the space provided (pg.4).
- ☐ Owners Manual is in the vehicle's glove box.
- ☐ Supervisor has demonstrated the instructions in the Owners Manual to the customer/driver upon delivery.

Inspection Information (Please Print):

Name: _____ Signature: _____

Completed by: _____

Title: _____ Date: _____

Liftgate Model: _____ Liftgate Serial Number: _____

